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WE would call attention to the Department of Correspondence in the AMERICAN ANTIQUARIAN. This department has been referred to by foreign magazines oftener than any other, and we have reason to believe that it is considered very valuable. We desire, however, that it become still more important, especially as we hope to make it a specialty in the bi-monthly The contents will at least be more varied by this means, and we want to put into it as much interesting reading as possible. We would, therefore, solicit correspondence, and herewith enclose a list of topics on which we desire information. In addition to these, however, we would say that anything in the line of Notes and Queries will be acceptable, and we hope that all parties who are at all interested in archæological study will favor us.

Address

STEPHEN D. PEET, *Editor*,
Clinton, Wisconsin.

THE Editor of THE AMERICAN ANTIQUARIAN desires correspondence and information on the following topics:

1. The Aborigines of North America, their language, traditions, customs, migrations, or early history and condition.
2. The Mound Builders, their relics, earthworks, symbols, modes of burial or other facts.
3. The Pueblos, or the early inhabitants of Mexico, New Mexico and Peru, or the Pacific coast, with accounts of the ruins, style of architecture and peculiar relics, styles of ornamentation, and any other fact of interest.
4. The discovery of the remains of the mammoth and mastodon, or the bones of man, or any traces of either man or the mammoth, in the geological strata preceding the present historic period.
5. Any evidences concerning the migration of the American races from either continent, by way of Behring's Straits, the Polynesian Islands, or by way of the Atlantic from the European or African coast.
6. Any comparison between the languages, relics, remains, skulls, skeletons, earthworks or architectural structures, symbols, hieroglyphics, inscriptions or other evidences of man in America, and the races of other lands, either in Japan, China, East Indies, Africa, the Polynesians or Siberia.
7. Any intelligence as to the origin of the various traditions among the aborigines, or of the serpent symbol and the sun worship, and other peculiarities of religion in America, whether it be by a comparison with the same customs in other countries, or by the accurate description of the facts as they are found in this country.

Correspondents will confer a favor if they will mention all discoveries, explorations and investigations made in any of these directions. The brief statement of facts, without any pains-taking in the form of the statement, provided only it be accurate and plain, will be very acceptable, and will materially aid in accomplishing the designs of THE ANTIQUARIAN. Address, Rev. S. D. PEET.

The Editor of THE AMERICAN ANTIQUARIAN is collecting material for publication on the Native Races and the Prehistoric Antiquities of America. All persons who have in their possession books, pamphlets, unpublished manuscripts, or other papers on these subjects, will confer a favor if they will send a copy of the same to the address below. The object is to make this collection of the literature of Archæology and Ethnology as complete as possible, and one which shall correspond to the many collections of relics which are being gathered in various localities. Newspaper articles upon the various discoveries of bones or relics and other prehistoric antiquities and upon local pioneer history, especially if containing accounts of the Indians and their history or traditions, are particularly desired. The Secretaries of Historical and Pioneer Societies, and of Academies of Science or Natural History Societies, are respectfully requested to forward copies of reports and proceedings, at the earliest opportunity, for notice; and publishers are also requested to send books on the above subjects for review in the Magazine.

THE ANTIQUARIAN is designed to be the medium of communication between students of Anthropology in all lands. An exchange of publications is therefore respectfully solicited from the various Anthropological and Archæological Societies of Europe and other countries. Address Rev. S. D. PEET, Editor Am. Antiquarian.

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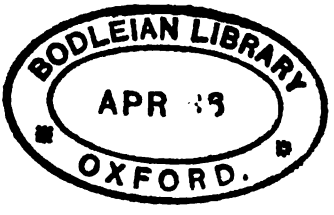

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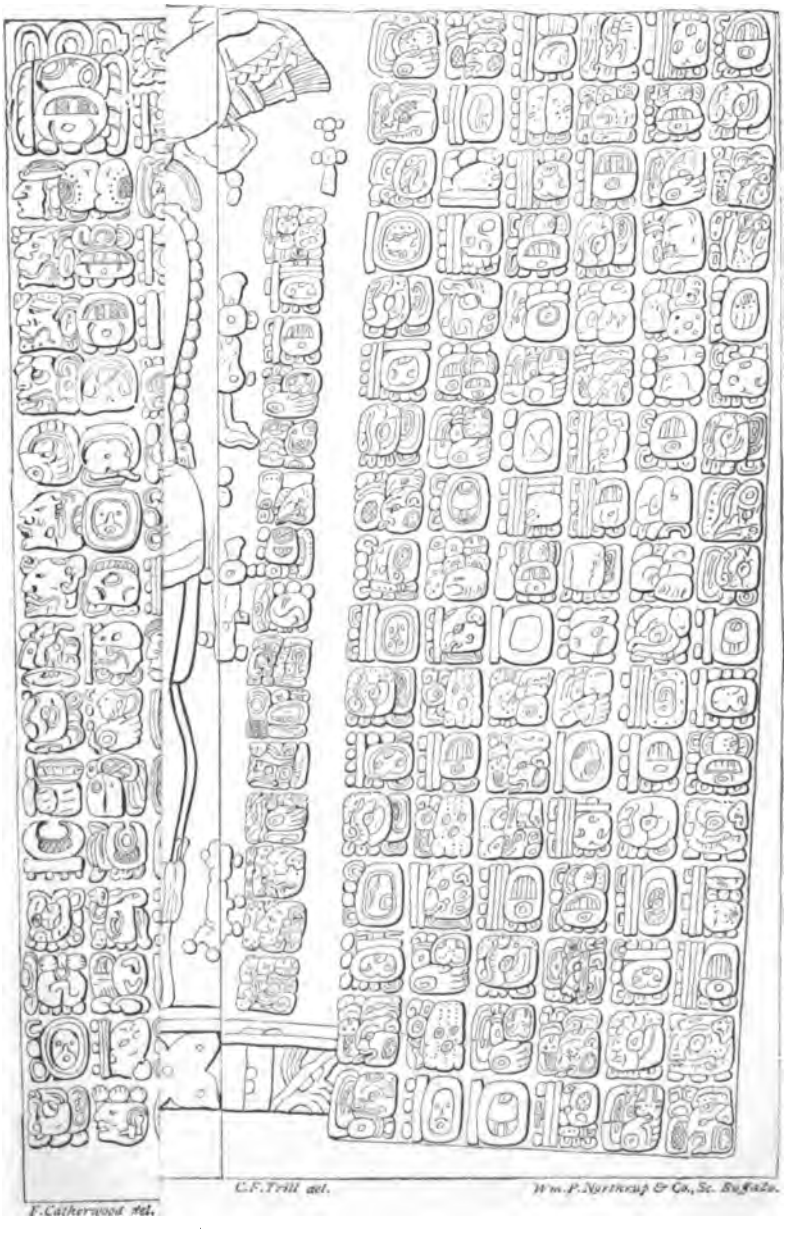

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"NATIVE RACES OF COLOMBIA."

SIXTH PAPER.

AGRICULTURAL PRODUCTS OF THE CHIBCHA.

Having no domestic animals and the commonalty being forbidden venison, the food of the nation consisted almost exclusively of grains, fruits and edible roots. The potato being indigenous was extensively cultivated, as also the "batatta," or sweet potato. The Yuca and Aracacha, both very nutritious, the former being very rich in starch, can be made into excellent bread, and the latter, seeming to combine the properties and taste of both the parsnip and carrot. Squashes or pumpkins in great variety and melons, were abundant. Corn was the bread staple and the base of their much loved "Chicha," without which neither feasting, fighting, worshiping, dancing, marrying, dying, mourning nor burying were possible. From the cradle to the grave, and even into the latter, "Chicha" was the indispensable accompaniment. As used by the native tribes, it was very nourishing, so much so, that even at this day, five pints of Chicha will satisfy all the demands of hunger in the peon, during a day's labor. When strong, it is slightly intoxicating. Besides corn, there was cultivated the Quinoa (Chino-podium quinoa) of which was made a sort of pudding seasoned with herbs. This plant is not known to the present generation.

The Platano, which to-day supplies at least half the food of Colombia, does not seem to have been cultivated in the high plains occupied by the Chibcha, but it is mentioned by some historians as being found in "Tierra Caliente"—the hot country—in several distinct sections of the present territory of this government, and as this plant has been found represented upon the tombs of the Incas

in Peru it was doubtless indigenous. To-day the African plantain is known here as the "*Guineo*," but to tourists as the "Musa Sapientum," and to the people of the United States as the "Bannana;" but the indigenous variety known to botanists as the "Musa paradisiaca," while evidently of the same family, is distinct in many particulars.

The different classes of food above mentioned, were produced altogether by hand labor, with simple tools, such as hardened sticks, stone picks, stone axes, etc., and almost all the out-door labor was performed by males.

A recent writer, whose work I will translate hereafter, asserts that implements of husbandry and war have been discovered, showing that copper was also known and used among these native races to an extent not heretofore credited, and that such implements were hardened with an admixture of tin which gave a cutting edge equal to tempered steel.

Thus far I have not before encountered any evidences of the above, in any of the many works hitherto examined by me.

The women of this people performed the household work, spun, wove and colored the cotton mantles for domestic use and for market.

The artisans in gold and other materials for the uses of the rich and luxurious, were by no means rude, but showed much skill, taste and delicacy, both in execution and design, as may be seen by works still existing, some of which will be represented hereafter. They also wrought figures in relief in intensely hard stone.

One of these seen by the writer was a well cut head and trunk of their god "Bochicha," cut in pure silex (flint), through which was also drilled or bored a hole of one-sixty-fourth part of an inch in diameter, through which to pass a thread with which to suspend the image from the neck.

The Chibcha were without weights and measures, being in this respect behind one of the tribes of Antioquia, noticed in No. 1 of this series, but they had a uniform coin or disc of gold which was used as money in their commercial exchanges.

The calendar stones have been given by Duquesne.

According to him as will be seen hereafter, every line and dot has its value in the symbolical rendering or reading of the calendar.

These calendars and the symbols illustrate the advancement in culture attained by the Chibcha priesthood and to prepare the reader for the translations of Father Duquesne's manuscript which seems to explain clearly the calendar and to prove as well that the priests represented by arbitrary signs, numbers, syllables and words, a fact declared not to exist by the earlier historians, but the industrious researches of the learned prelate seem to have proved otherwise.

The commerce of the Chibcha was of no mean importance and extended to far distant vallies and even to the sea coast.

The salt of Nemocon and Cipaquira; their well woven and beautifully colored mantles; their emeralds and the artistic products of their gold workers formed the base of their exports, while their importations consisted of a great variety of sea shells, pearls, dried fish, and crude gold in dust and nuggets. One of the fairs to which the Chibcha merchants repaired was held annually near the present town of Coyaima, on the Soldana river, in the present State of Tolima. Here the products of the Chibcha were exchanged for the gold dust and nuggets obtained with little labor from the rich and still unexhausted "placers" near the Soldana, and for parrots, parroquets and guacamayas, which were sacrificed by the Chibcha in great numbers on every solemn occasion.

Another fair of great importance was built at Zorocota, near the present bridge over the river Sarabita, in the northwestern part of the present State of Boyaca.

To this fair resorted the Northern Chibcha, the Agatac, Chipatac and the industrious, skillful and intelligent Guane, the latter as already stated in a former paper, being noted for their fine forms and their very light color, notwithstanding their territory was in the hot country. There was also a fair each three days in Turmeque, to which, according to the Quesada, the people flocked by *millions*, (probably Quesada wrote *millares*—(thousands) and the printer changed it to the incredible, without the error being noticed). At this fair were exchanged the fruits and products of the tropics, temperate and frigid zones, which are here in juxtaposition; also large quantities of emeralds from the mines of Somondoco. Beside these the fairs of far distant lands were sought by the merchant, as is evidenced by many incidental statements by various authors and by isolated but corroborative facts which are undisputed.

The edifices of the Chibcha did not correspond with their general advancement otherwise.

Their houses were of wood filled in with clay, the roofs being conical in form and adorned with mats and feather grass. These being within strong walls which surrounded their gardens, gave at a distance the appearance of fortifications flanked by towers.

The only Chibcha sovereign who proposed to construct a temple of stone was Garanchacha, who usurped the throne of the Zaque. The tradition was, that a damsel gave birth to a "*huaca*" which became a child, who, when grown, claimed the sun as his father. He was believed and venerated accordingly. When arrived at man's estate he murdered the Zaque and usurped the throne. This personage proposed to build a temple to the sun, and for this purpose ordered stone and dressed columns to be brought from the most remote parts of his do-

minions, but he died before beginning the work. Padre F. P. Sinon says, the place designed for this temple was in the square of Porras, north of Tunga, where were found at the time of the conquest a quantity of unwrought marble of great dimensions, others also being encountered in Ramirique, and still others in Moniquire. The same authority also states that the columns seen in the valley of Lieva (N. W. Boyaca) were for the same service, but Senor Manuel Voles Barrientes, in the bulletin of the Geographical Society of Paris for 1847, shows that these columns are in situ, forming part of a vast edifice, the object of which is unknown.

The "Culture Hero" of the Chibcha is by some historians confounded with some of their gods, but nearly all, and those the most reliable, agree upon the following account: He was known by different names, Nemterequetiba, Xue, Chinsapague, or "Sent From God."

This ancient came from the east, had a long beard, bound up by a band. He wore a tunic without collar for a vestment, to which was added a mantle, the points of which were knotted on the shoulders — a form of dress used by all the Chibcha at the time of the conquest — the Poucha and Ruana being of Peruvian origin.

The Chibcha were at the time, according to their own tradition, in the lowest state of barbarism, wearing only crude cotton secured by bark strings about the body to protect it from cold and for the slight uses of the modesty of savages. They were without a knowledge of any future life, nor had they any form of government for the present.

The civilizer began his preaching at Boza, where at the date of the conquest the natives still held in great reverence a rib bone of some large animal, which they said had accompanied the prophet at the date of his arrival, but died subsequently. From Boza he passed to Menquita, Fontibon and soon after to Cota. At the latter place the concourse became so great that it became necessary to construct a ditch around a small hill that he might not be pressed upon or incommoded by the curious and interested audience, and from within which he could with more ease to himself, instruct the people.

He not only taught them to spin and weave cotton mantles, etc., but to dye and paint them in divers colors. He subsequently passed toward the north and thence down to the country of the Guane where he found a people most apt in understanding his teachings. He not only taught by precept, but by example, and his life during the long time he spent in civilizing these peoples was in all respects pure and a model of virtue.

Ultimately he disappeared in Sogamosa, leaving, as heretofore stated, a successor, who should continue his teachings and be the guardian of the lands and regulations which had been estab-

lished by general consent, solely by force of persuasion and example.

As evidence of the wisdom and forethought of this legislator, may be mentioned one example of a law still in force at the time of the conquest, which by all intelligent Chibcha, was attributed to him, and which through its great antiquity, had almost the force of a Divine command.

In case of the death of the legitimate wife of a chief, the surviving husband was forbidden all access to women for a period of five years; by this method securing good treatment, love and care to the weaker sex, and curbing, in so far as was possible, concubinage, which seems to have become too deeply rooted to be destroyed. It is an agreed fact that the Chibcha women were almost universally well treated, as were also the sick, infirm and aged.

It seems impossible to reconcile the account heretofore given of this missionary's teaching with the barbarous custom of human sacrifice prevailing at the time of the conquest, except upon the theory that the customs of other nations were from time to time adopted, either through missionaries of sun worship, or through the corruptions of priestly class. Nearly all the early historians, however, agree that one so pure and exemplary could be none other than St. Thomas or St. Bartholomew, who, according to tradition, were sent eastward to preach the gospel of Christ, and who are by some, believed to have passed to this continent. The historians, Padre F. P. Simon, Bishop Pudrahita and Padre Zamora, with many secular writers, seem to have been convinced that this "culture hero" could have been no other than one of the apostles named.

Before giving the translation of the MS. of Padre Duquesne in reference to the calendar of the Chibcha, I will first mention some of the particular manners and customs of the Panche and Muso, the two most warlike and troublesome neighbors of the Chibcha. These nations occupied the valleys and cordilleras lying between the territory of Chibcha and the Magdalena river.

The Panche were comparatively new comers, having migrated from parts unknown to this writer, and having driven out or absorbed former tribes, they endeavored to gain possession of the country of the Zipa, but had been repulsed by the well disciplined warriors of that ruler. They were a rude Spartanic tribe, noticeable for the custom of flattening their skulls, like the Natches and Choctah of the Mississippi, and may have descended from the same people as the priests who are represented in the bas relief known as the "Tablet of the Cross," and shown on p. 390, "North Americans of Antiquity."

The Muso were also comparatively recent comers, for a time subjected to the domination of a more powerful tribe, but regain-

ing their independence, they became very troublesome neighbors of the Northern Chibcha previously to their conquest and subsequently to the Spaniard as well.

Some of their religious customs resembled those of the Chibcha, but they neither worshipped the sun nor moon, nor offered human sacrifice. Their tradition in regard to the origin of the human family was, that a shade or spirit at one time, upon the western side of the Magdalena, created human figures of wood, which upon being thrown into the water; first became flesh and bones, which upon receiving the "breath of life" from the spirit, then became men and women, which being paired, were sent to distinct parts to people the earth, after which the spirit or shade disappeared and was seen no more.

When a youth arrived at the age of sixteen his parents betrothed him to a maiden who was not supposed to be aware of her intended fortune. When all was arranged between the parents, the youth paid a visit of three days to the maiden, and seating himself beside her, began his love making, receiving, however, from the maiden at first only scorn and blows, but after three days she became more placable, and proceeded to aid her mother in preparing food for her lover. For one moon the pair slept together without the rights of the marital relation, under the severest penalties. After which the marriage was consummated by the bride assisting in planting a field, accompanied by her mother-in-law, to whom was given some jewels like rattles, which were called "fuches."

When a man died leaving a widow, the brother of the deceased must marry the relict, unless she was the cause of her husband's death, in which case the obligation ceased.

If a woman committed adultery and her husband died, either in avenging his dishonor or by his own hand, his relatives placed the body of the dead in the lap of the woman, which she was compelled to deplore three days, without food or rest, only a little chicha being allowed her; after which she was driven from the house. The body was first burned, then placed upon a scaffolding, which served for a temporary mound, the remains being accompanied by the bows, arrows, war clubs, etc., of the deceased. At the end of one year the friends performed the final ceremony of burying the remains permanently unassisted by the widow, who during the year must wander alone and unassisted in the woods, dependent solely upon herself for food. After the final interment of the dead, the relatives upon both sides sought the wanderer, and finding her, she was conducted to her house with great honor, and could afterward marry again, her crime having been atoned for. If, however, the husband took his dishonor more philosophically, he could break all the furniture and crockery in the house; after which he took himself to the woods for

a month, while the woman replaced the damage, when she sought the husband, who being found, was treated to a sort of Indian "curtain lecture," when both returned very happily to the late unhallowed home.

THE EMBLEMATIC MOUNDS OF WISCONSIN.*

ANIMAL EFFIGIES; THEIR SHAPES AND ATTITUDES.

[*A paper read before the American Association for the Advancement of Sciences, at Minneapolis, August 22, 1883.*]

The Emblematic Mounds of Wisconsin have long engaged attention but are not yet fully understood. So many have looked upon them as mere objects of curiosity without giving any close study to them that an amazing amount of ignorance concerning them prevails among the residents in the very state where they are found.

It has even been doubted by some whether there were any such works as have been described under the name of effigy or emblematic mounds. The mounds exist in great numbers in the state, and in many places form conspicuous objects in the landscape. They abound especially on the borders of the many beautiful lakes of Wisconsin, and therefore may be seen and studied by citizens and visitors from a distance They should be regarded as adding to the attractions of these places of resort, and be classified with other curious and interesting monuments of the world. At present they fail to secure attention, or if noticed are regarded as without significance and hardly worthy of a second thought. One reason for this is, that an opinion has arisen that the significance of these effigies cannot be ascertained; that an inscrutable mystery hangs over these silent monuments, and that nothing can be ascertained concerning them or their builders. This opinion has been strengthened by persons from whom different things would be expected. Intelligent writers and historians have maintained that there could be no solution of the problem, no breaking of the spell which holds them, and that it is folly to undertake to interpret the meaning of the emblems or to give any significance to the effigies. This position seems strange, especially where maintained by those who are in the habit of investigating closely and of grappling with hard problems. It has the effect, however, to strengthen the popular prejudice and to hinder investigation. The author has had opportunity for many years of studying these works, and has

*A paper similar to this was published by the Wisconsin State Historical Society, in the ninth report. We use the same cuts which were used to illustrate that. We hereby acknowledge our indebtedness to the Secretary, Dr. Lyman Draper, for the use of the cuts and for many other favors.

become so familiar with them as to know many things about them which are unknown to others, and therefore writes confidently concerning them.

The object of the present essay is not to maintain any theory concerning the object or the use of the mounds, or the significance of the effigies, but merely to portray and to describe the distinctive points. In the essays already published the situation of these mounds has been described, and certain peculiarities of them mentioned. They are, for the most part, situated on high points of land, where extensive outlooks are gained, and are often found in groups clustered close together. These circumstances have led the author to the opinion that some of them might have been used for burial places, the effigies representing the tribal totems or the private totems of the chiefs and prominent persons found in the mounds. The names of the persons buried might not be given in words, but could be given in a picture. Thus the mounds or the effigies of the mounds should be considered a kind of picture writing or hieroglyphics corresponding among these primitive races to the hieroglyphic inscribed in the monuments of the more cultivated races of the east. The private totems would in that case be the more primitive form of hieroglyphs, and these mounds be said to contain in their shapes this — the most primitive form of picture-writing. It is certainly true that the tribal totems were significant of names, the system of clans or gentes being shown by these totems and the names of the gentes expressed in them. It is possible that the same system prevailed among the Emblematic Mound-builders, and that instead of being portrayed on the tents, the totems were built into the soil and made expressive of the names of the clans or gentes resident in the different places. The author has also maintained that some of the mounds were designed for military defenses, and that they were erected on prominent places so that they might serve as signal stations or outlooks.

The opinion has also been expressed by the writer that certain groups of emblematic mounds were used for game-drives. Some of the mounds in these groups, especially the long tapering mounds which are often seen situated parallel to one another, were constructed as screens, behind which hunters might hide and where they might shoot into the game as it was driven through.

Still another object or use has been ascribed by the author, to the emblematic mounds. Certain mounds have been discovered situated around open places where every appearance indicated that there were ancient villages situated in them. It is believed that the mounds were constructed around the villages so as to form a sort of defense to them, the effigies serving a double purpose, making an imperfect wall and at the same time acting as a sort of protection or charm to the village, very much as the

totem posts found upon the northwest coast serve as a protection to the houses and villages there.

Leaving these points we proceed to a description of the emblematic mounds, taking as the especial object of study the animal effigies in their different shapes and attitudes. The present paper will be confined to one class. Future papers may describe other classes. The object set before us is to describe that class of effigies which represents land animals, especially the grazing animals, their shapes and attitudes and other peculiarities as four footed creatures. It has been found that the variety of attitudes expressed by the effigies is so great that only one class of animals can be considered, if these attitudes are to be given at all in detail or described with any satisfaction.

It is a singular fact that the Mound-builders divided the animals according to a strictly scientific system. We do not maintain that they understood science or were acquainted with the genera or species. It has been disputed whether the primitive mind was capable of these generic distinctions. Yet the fact that these divisions of the animal kingdom are strictly adhered to in the representations of the animals, shows that the Mound-builders were acquainted with them. They were true naturalists; they understood the habits of the animals, could delineate their peculiarities of forms, and knew the difference between the different species even better than we do. They were artists, also, but they were artists who were true to nature, for they understood and could delineate not only the attitudes and shapes of the animals, but they understood the significance of each attitude and could present in the effigies the very disposition or intent which the animals would express in the different attitudes. It seems sometimes marvelous that these people should so delineate the different class of animals and portray the individual species, and then give to each kind of animal so many different attitudes. Their way of delineating the shapes and attitudes was also singular. They depicted them as they saw them, and represented them, not as lying upon the ground, but standing or moving. The mounds are erected above the surface and the effigy is horizontal, the eye looking down upon it, but the animals are represented in the life-like attitudes. What is singular about them is that the different classes or orders of animals are represented in different ways; the land animals in one way, the water animals in another, and the birds in still another, showing that the builders had an acquaintance with these different classes. This method of representation is so uniform as to convince one that it was intended. By their shapes the different classes of animals may be ascertained or recognized, and by the attitudes the different dispositions of the animal can be learned and their hidden significance also apprehended.

In the former paper prepared on the animal mounds, the au-

thor divided the effigies into four classes, namely quadrupeds, birds, fishes and inanimate objects. Further study of the effigies, however, has revealed the fact that the mound builders divided the animals more correctly than this; they divided them according to their habits, as follows: Land animals, amphibious creatures, birds and fishes. They had a very singular way of designating these classes by the effigies. The study of the effigies has led therefore to the following classification; a classification in which the various orders of animals are made to correspond with the shapes of the mounds, the habits and character of the animals being portrayed by the effigies, the representations being so uniform as to give rise to the idea that the classification of the animals was intended.

I. *Land animals.* These are quadrupeds, but they are always represented in profile, two legs only being visible with the other parts of the body brought into relief by the mound. The attitudes are expressed by the different shapes of the mounds, but the profile view is distinctive of the class.

II. *The amphibious animals.* These are represented as sprawling or as seen from above, with four legs visible, the shape of the back and different parts of the creature also brought into relief, but the legs always on two sides of the effigy.

III. *Birds or creatures of the air.* These are represented in different ways, with their wings sometimes extended and sometimes folded, but always visible and made distinctive of the class. The attitude of the birds are varied, and are always expressive.

IV. *Fishes and water animals,* Represented without legs or wings, and with fins very rarely visible, but the body, head and tail brought into relief, and the attitudes of the creatures depicted by the various shapes of the mounds.

V. *Inanimate objects.* The author is not sure whether these mounds furnish any conventional forms or whether any significance should be ascribed to the effigies of this class, but would refer the reader to the article published by the Wisconsin State Historical Society for a view of the variety of objects embraced under this class.

It is remarkable that the habits of the animal should be shown by the effigies, but such is the case. The land animals are all of them represented in such a way that there need be no mistaking them. The different kinds of land animals are also given, such as the grazing, the fur-bearing and the beasts of prey. Each class is distinguished in a different way, but all of them are marked by the same peculiarity of being in profile. The amphibious creatures are also represented in all their variety, and the distinction between them and the land animals is plainly given.

The birds or animals which inhabit the air are represented in

such shapes as to be easily distinguished, and there is no difficulty in placing all the specimens under the third class.

The water animals, such as fish, craw-fish, tad-poles, etc., are represented without legs, wings or fins, and so can be easily classified under the fourth head, their shapes being always distinctive. The inanimate objects, such as badges, weapons, symbols, etc., unless studied closely, might be mistaken for animals or birds, and have been so mistaken by authors who have treated upon the subject, but after all may be easily distinguished if we will only notice the distinctive points.*

We propose to give under these different heads the different varieties of creatures, which are portrayed by the effigies making subdivisions under the different classes. In this paper we shall consider only the first class, namely, the land animals. They may be separated into several subdivisions and made to represent the animals according to their habits and other characteristics, as follows: (1.) Animals with horns, including all the grazing animals, such as the buffalo, moose, elk, deer, etc. (2.) Animals with tails, including the fur bearing land animals, such as the fox, wolf, squirrel, panther, and excluding the amphibious fur bearing animals, such as the otter, the beaver, the muskrat and other creatures of the kind. (3.) Animals represented as without horns and without tails. These animals are mainly beasts of prey, such as the wildcat, the lynx, though at times the rabbit and prairie dog and other creatures of the kind may be represented.

A great variety of the effigies of the land animals are found. This variety is owing not only to the different animals which are represented, but to the attitudes of the animals as well as to their shapes. Dividing them then according to the shapes and attitudes we find several classes.

1. Four-footed animals, with horns, their horns being represented by projections above the head. Fig. 1 represents an effigy of his class. It is presumably a moose. The mound which has this shape, is situated near the village of Muscoda, in the Wisconsin river. It was first discovered by Mr. S. Taylor. He says: "Throughout this region embankments of this form are very numerous. Some have two parallel projections from the back of the head. In the present they seem to be so blended as to represent but one. It is very perfect in outline, 79 feet long and 24 broad."

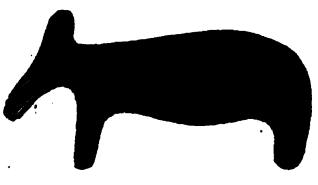

Fig. 1. Moose, near Muscoda. TAYLOR.

Another effigy of a horned animal is given in Fig. 2. It is

*See Lapham's Antiquities, also article in the State Historical Report, Vol. IX.

evidently a moose. The moose is in the attitude of grazing. The animals are represented in attitudes which correspond to

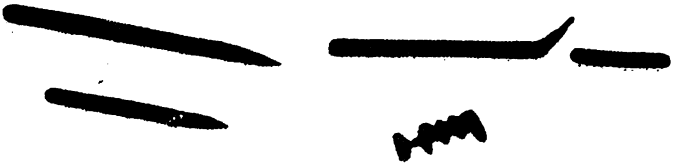

Fig. 2. A Moose grazing. I. A. LAPHAM.

their habits. Horned animals are, as a general, thing grazing in their habits. The moose is thus represented. The long, straight mounds adjoining probably represent a game-drive and the effigy may have been intended to represent the kind of game for which the drive was erected.

This group of mounds is situated on Honey Creek. It is described by Dr. Lapham in his Antiquities, but was plotted and surveyed by Mr. Canfield, of Baraboo. *

There are many other horned animals represented in effigy, the *Buffalo* being the most common. One such effigy was once visited by the author in company with several others near Beloit. This effigy is also situated near what the author considers to have been a game-drive. The outlines of the animal are very distinct and the effigy is a striking one. Mounds representing the buffalo have been described by Dr. I. A. Lapham, by Moses Strong and several others. Mr. Strong represents a row of buffaloes as in procession, following one another around the edge of a high bluff. He says: "From their appearance in the ground, no resemblance to any particular animal could be detected," but from the diagram given one could easily recognize the animal. Another group is also described by Dr. Lapham, and the effigies in the group are portrayed. Several of the figures in this are evidently the effigies of buffalos. The location of these mounds is near the mouth of the Wisconsin River, on land adjoining the residence of Hon. Robt. Glen.

The buffalo so nearly resembles the elk and moose that it is difficult to distinguish it, but generally the attitude and the general shape will be so given by the effigy as to show what animal was intended. It is remarkable that effigies of buffaloes, moose and elk are more frequently associated with game-drives than any other animal.

* See Lapham's Antiquities, Page 70; also Plate 47.

The *Elk* is also represented in effigy. Two such effigies are described by Dr. Lapham in Plate 43, which represents a large group of mounds near Honey Creek, on section 18, township line range 6, east. The effigies in this case are also associated with a number of long mounds, which may have been intended to represent a game-drive. The group was situated near the residence of Mr. Mosely, close by the mouth of Honey Creek. These effigies are now nearly obliterated. Several effigies representing horned animals are also described by Dr. Lapham as situated near the Kickapoo river, section 6, town 8, range 5, west. A cut of these effigies is given herewith, and we leave it for the reader to decide whether they represent the buffalo or the elk. (See Fig. 3.)

The *Deer* is another animal which has been represented in effigy; but in a great variety of attitudes. A deer may be seen on the ground near the insane asylum at Madison. It has been engraved, and a wood cut is herewith presented(Fig. 4.) The engraving is, however, defective. There is in the mound no such division in the legs or horns. The effigy is also much smaller than would be gathered from the figures. It is in fact smaller than that of an eagle near by it. We however furnish the cut to show how much need there is of care in engraving the effigies. This representation was made by Dr. Wm. DeHart. We doubt, however, whether any effigy intended to represent a deer ever had the horns separate as this has. A cut is furnished which more truthfully represents the shape of the mound if it does not the shape of the animal (Fig. 5). It was first represented by Mr. S.

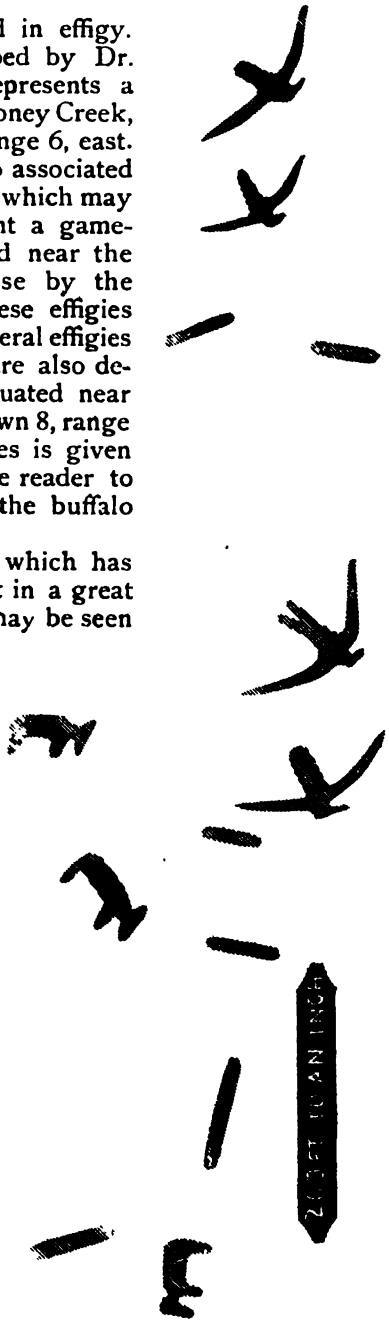

Fig. 8. Buffalo on Kickapoo River.

Taylor. He says: "It seems to have been intended to represent some fleet animal. It is about 100 feet in length, 18 feet in height.* This also was situated near Muscoda, in Grant county.

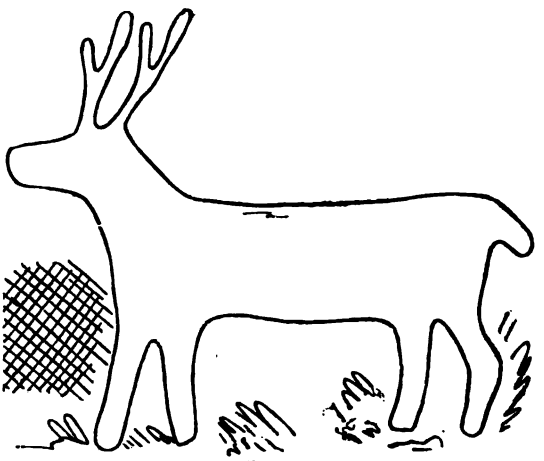

Fig. 4.

The effigy of a deer has been discovered by the writer, near Muscoda, on the Wisconsin river. It is one of a large group of mounds which has never been described. The deer was in a very striking attitude. Its head was erect with the neck curved back. Its legs were drawn up and the whole attitude expressed alarm. It was situated among a series of long parallel mounds which may have been intended as a game drive. The group is worthy of further study. Another figure resembling the antelope was found by Dr. Lapham, near Horicon.

Fig. 5.

Associated with the last group is an animal which appears to have "a short tail and horns, and is probably designed to represent some kind of deer." Judging from the diagram the effigy was that of an antelope.

We give here several cuts which represent horned animals. They are not representations of effigy mounds, but rather of inscribed figures. They are taken from the series of inscriptions seen on the walls of the pictured cave at West Salem. They are given for the sake of comparison. It will be noticed that in the picture cave the inscriptions are drawn with the outlines of the animals only, and no relief such as the mounds give. They are, however, given with the separate divisions of the legs and horns, and even the branches of the horns. They are not as symmetrical and do not represent the attitudes of the animal as well as the mounds do. It is more difficult to recognize the animal intended than it is by the effigy mounds. The animals are represented with legs at one side the same as they are in the mounds, but there is no uniformity. In one case the hoofs are pictured and only two legs are visible, but the horns are separ-

* See Smithsonian Contributions, Vol. I, Plate XLIII, No. 6, Page 130.

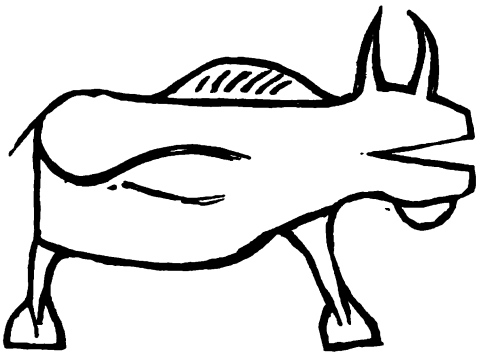

Fig 6. Inscription of a Buffalo from Picture cave, West Salem

ate; the mouth is open and the heavy body is portrayed. The hump on the shoulder and the fold below the jaw are also given as if all the prominent features were represented, and yet it is difficult to say whether it is a buffalo or moose, except as the horns indicate it.

The next figure represents an animal with two horns, the legs separate; no hoofs; the eye visible and a bushy tail and a slight hump above the shoulder. This also is so awkwardly given that we cannot identify it. It may have been a female buffalo, and judging from the horns we should say that it was.

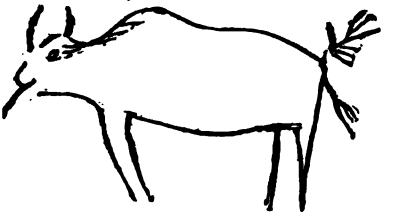

Fig. 7. Inscription of Female Buffalo.

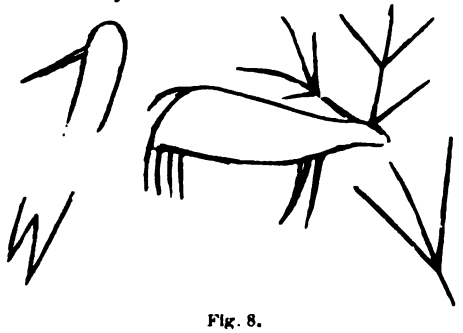

Fig. 8.

The next figure represents an animal with branching horns. The legs, however, are represented differently, fore legs with a single line, hind legs with a double. Judging from the branching horns, the small head and the large rump, we should say it was a deer, and yet the difference between the deer and the moose and the elk is given more plainly and distinctly by the effigy and the mounds than by the inscribed pictures.

2. Among the effigies which represent animals in profile we find a large class which appear with no projections above the head to represent horns, but with projections at one side to represent legs and with prominent projections behind to represent tails, making this part of the animal distinctive. This class represents a greater variety than any other. It is a very interesting class. The attitudes of the animals are very striking

and the shapes throughout very expressive. The effigies generally represent the fur-bearing animals and are true to life. It will be found by study that the fur-bearing animals have heavier tails than any other class. These effigies do not include all fur-bearing animals for there are a few animals of this class as the wild-cat, lynx and rabbit, which although fur-bearing, do not have tails. The tail is distinctive between the two classes.

The shapes of the effigies of this class, so skillfully imitate nature as to show great familiarity with the habits of the animals. We begin this series with an effigy which is very numerous and very prominent, but concerning which there may be some difference in opinion as to what animal is signified. We designate it as the effigy of the panther or mountain lion. We give a cut of this effigy copied from the figures described by Dr. Lapham. The group may be seen on the banks of Ripley Lake. Two of the animals appear as if they were in conflict, while the other has its head toward the bank overlooking the waters. A similar group was seen by the writer on the banks of Green Lake. The only difference was that the pair in conflict were here situated at right angles with the bank of the lake, and the passage way between them formed an entrance to a compass or open plat of ground around which were many other effigies. Another group, similar to this, may be seen on the bank of Turtle Creek, near Beloit, on land now crossed by the Mil. & St. Paul R. R. Here also the animals are in conflict, but they are arranged feet to feet, as panthers and all creatures of the cat-kind are likely to fight. A passage way between them also opens into a large group of effigies. Another effigy is found on the edge of this group, forming, as is the case at Ripley Lake, a third panther, but with the tail

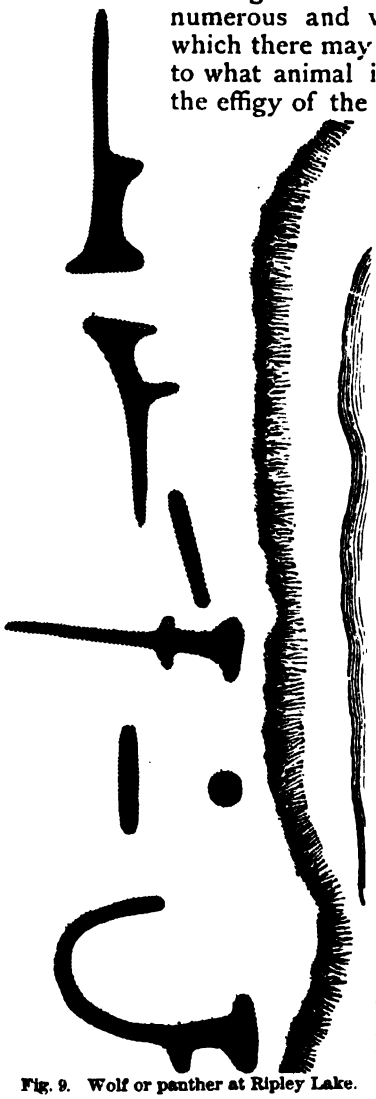

Fig. 9. Wolf or panther at Ripley Lake.

straight, and fronting the group, instead of being parallell to it, as here represented.

Another cut is given here to show what various attitudes and shapes this effigy assumes. (Fig. 10.) It is an effigy which has been called by Dr. Lapham a "battle axe," but was evidently intended to represent a mountain lion or panther or some such animal. It is situated on the banks of Lake Koshkonong in a group which surrounds a lofty conical mound, and a so-called altar mound. The conical mound was evidently used as a beacon or place for lighting fires, and the mound accompanying it may have been used as a sacrificial altar. The effigy corresponding to the panther on the opposite side is that of a catfish or bull pout. The attitudes of these two effigies are very expressive and will be noticed.

Fig. 10. Mountain Lion and Catfish at Lake Koshkonong

There are two of these panther mounds on the bank of Lake Monona, nearly opposite the capitol, about a mile south of the

city of Madison. They are situated in a prominent place overlooking the lake, but they differ from the pairs of panthers before described, in that the heads are turned inward and the feet outward, the animals apparently following one another instead of being in conflict. Another effigy of the same kind may be seen on the side of a ridge between Lake Wingra and Lake Monona, half a mile south of the depot. Two more have been seen and plotted by the writer on land adjoining to the south of Gov. Washburn's place, now the Catholic Asylum for the Sisters of Charity. One of these effigies is in a very striking attitude, the animal being represented as crouching. The legs are drawn up, the form stretched out, the head erect, and the whole effigy representing the animal (evidently a panther) as resting. We can almost see the tongue lolling and imagine how the animal looked while panting and basking in the sun.

The effigy is situated on the banks of a lake near a marsh, but stretched out on a gentle slope where the sun would fall unimpeded by any forest. Several other effigies of this kind have been seen by the writer on the summit of a hill near the cemetery, at Madison. A long line of straight oblong mounds interspersed with effigies of various kinds stretch from the cemetery southward. They are situated in a dense forest of wood with a great deal of undergrowth which renders them difficult of access, but they form a very interesting group of mounds. Another effigy of this kind was visited by the writer during the last summer (1883), in company with Rev. A. A. Young, near New Lisbon. This effigy represented the panther in a striking attitude, but very different from that found anywhere else. It is situated on the banks of a small stream near a group of other mounds, and near a place which has long been frequented by the Indians as a dance ground or place of festivity.

The animal is pictured as leaping along the edge of the stream towards the group of mounds. It seemed to the writer when examining the mounds at this locality, that a part of the group was intended as a trap for game and that the animal is represented as leaping toward the trap eager to secure his prey. Other effigies of the same kind have been seen on the edge of a swamp and near the site of an ancient village at Great Bend, on the Fox river. This is a very interesting group of mounds, the village being situated on a prominent tongue of land with various effigies surrounding, but one of the effigies a panther, standing and looking into or through an opening or guarded way into the very site of the village itself. The shape of this effigy is peculiar. The body is attenuated as if the animal was suffering from hunger, nearly starved, the legs large in proportion, the tail long and straight, the head erect, but the whole form as if in the attitude of waiting and watching.

A mound similar to this in some respects, differing from it in having a heavier body, at least not so lean, but resembling it in the attitude of watching, was seen on the opposite side of the stream or marsh, about a half a mile from the village site, and near a large cluster of caches. The caches were situated on the banks of the swamp, hidden away from observation in the midst of a forest, and close by them, apparently guarding them, was this panther effigy. This is not the only place where the panther is seen guarding the caches, for Dr. Lapham has described such an effigy as situated in the midst of an ancient cornfield near the city of Milwaukee. A large mound is immediately in front of the animal and the cache is in the mound. This effigy was formerly situated on a part of the city known as Sherman's addition. "It may be considered," Dr. Lapham says, "as a rude representation of a wolf, or a fox, guarding the sacred deposit in the large though low mound immediately before it. The body of the animal is 44 feet, the tail 63 feet in length." We can imagine the effigy to be that of a she-wolf. * One of the most striking effigies of this class is represented by Dr. Lapham as situated five miles south of Burlington, on section 26, township 2, range 19. "It is a solitary mound, with a curved tail and large at the extremity. It is situated on a gently sloping hillside and the road passes directly over it. It is a very unusual circumstance to find such a mound," Dr. Lapham says, "disconnected from other works but we could not learn that any others existed in the vicinity."†

A very interesting group of mounds among which are several effigies of panthers may still be seen in a good state of preservation on land formerly belonging to Mr. Isaac Bailey, twelve miles north of Burlington, and three miles west of Great Bend. This is the place called Crawfordville by Dr. Lapham, though there is no village there and never was. The place was also mentioned by Mr. R. C. Taylor as one described by the papers as containing a group of mounds resembling lizards, alligators and flying dragons.

These effigies occupy ground near the Fox River, which slopes gently toward the river at the north, their heads pointing up hill toward the south or southwest, their bodies and tails being all parallel with one another. The group covers a surface nearly half a mile in length and is crowded thick with effigies of various kinds. One of the panther effigies in the group is described by Dr. Lapham under the name of a lizard, it is 286 feet in length, about 30 feet in width, and varies from two to six feet in height. The group has been visited by the writer, and Dr. Lapham's description proves to be correct with the excep-

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* See Lapham's Antiquities, page 17, also Plate IV, Fig. I.

† See Lapham's Antiquities, page 24, also Plate XIII, No. 1.

tion that two effigies are left out from the plate, one of them the effigy of a panther and the other of a turtle. Dr. Lapham has also described an effigy of this kind as situated near Waukesha on a height of ground a little east of the village. It was one of the best or most perfect effigies discovered by that author and is well represented on the plate, but no description of it is given. We have dwelt thus closely upon this effigy because it is a very important one.

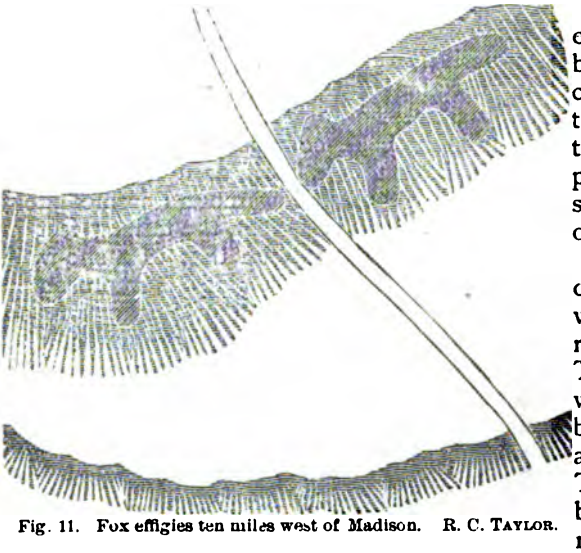


Fig. 11. Fox effigies ten miles west of Madison. R. C. TAYLOR.

There are other effigies which belong to this class besides those of the panther, and we now proceed to describe the effigy of the Fox.

We give a cut of two mounds which probably represent foxes. These mounds were surveyed by Mr. Taylor and Prof. Locke. They lie on the borders of a prairie in a woodland on the edge of a gentle stope. A short distance to the west of them is a natural swell of ground with a tumulus on the top of it overlooking it. An old Indian trail passes between them and the military road followed the same line. Mr. Taylor suggests that the figures were intended to represent the fox, but Prof. Locke remarks "that they have an expression of agility and fleetness and may have been intended to represent the congar or American tiger, an animal still existing in the region."

The fox is distinguished by its head. In this case, however, the figure has too large a head for the fox, and so we are uncertain whether it is a fox or a wolf which is represented. The wolf is generally exhibited by the effigies in a conventional shape, with the head straight out, as may be seen in Fig. 15, No. 20. There are, however, different kinds of wolves, and it is possible that this effigy in Fig. 11 was designed for one kind and that in Fig. 15 another. The fox is unmistakable in Fig. 14. We give Fig. 11 because these mounds are quite marked, and the effigy may have been intended for that of the fox.

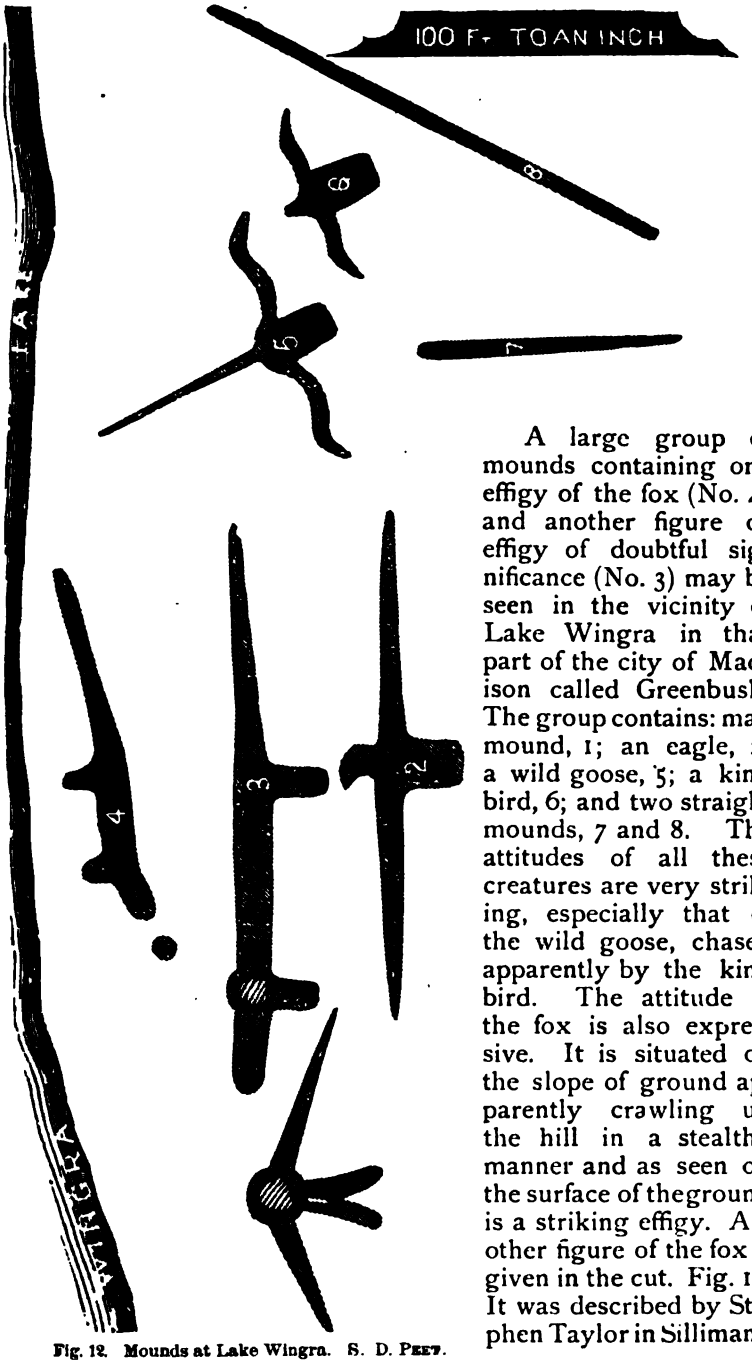


Fig. 12. Mounds at Lake Wingra. S. D. PEET.

A large group of mounds containing one effigy of the fox (No. 4) and another figure or effigy of doubtful significance (No. 3) may be seen in the vicinity of Lake Wingra in that part of the city of Madison called Greenbush. The group contains: man mound, 1; an eagle, 2; a wild goose, 5; a king bird, 6; and two straight mounds, 7 and 8. The attitudes of all these creatures are very striking, especially that of the wild goose, chased apparently by the king bird. The attitude of the fox is also expressive. It is situated on the slope of ground apparently crawling up the hill in a stealthy manner and as seen on the surface of the ground is a striking effigy. Another figure of the fox is given in the cut. Fig. 13. It was described by Stephen Taylor in Silliman's

Journal. It was situated on the Wisconsin river. A series of mounds, fifteen in number, extend along an eminence three hundred yards and placed at intervals of about twenty five feet apart. It is the same in which the effigy of a woman was seen. The fox was at the end of the row.*

Fig. 13. Fox on Wisconsin River Sec. 35, T. 9 R. 1 W.

Several effigies resembling the fox are described by Dr. Lapham, as having been seen at Lake Horicon. Others are described by the same author as having existed at Mayville. These are represented in figure 14.

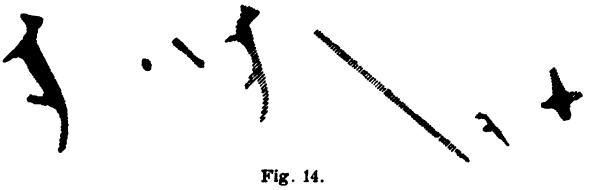


Fig. 14.

Another fox was also surveyed by Prof. Locke. It was situated about ten miles east of the Blue Mounds, amid a group of other mounds of other kinds.

The Prairie wolf. The effigy which is most frequently represented in profile is one which is somewhat difficult to identify. We have named it the prairie wolf to distinguish it from the panther. It resembles the panther in many respects, but in no case is represented with the head erect as that animal is.

Two specimens of the wolf effigy may be seen in Fig. 15, Nos. 20–21. This group is situated not far from the group described in Fig. 8, on the same height of ground, near lake Koshkonong. The other figures are effigies of a turtle, No. 17, of birds, Nos. 22—23, of oblong mounds, Nos. 18—19—24—25, of a badge or some unknown object, No. 16, and of an enclosure, Nos. 26 and 28. There is a resemblance between this effigy No. 20, Fig. 15, and that given in No. 3, Fig. 10. The effigy here is not so large or straight, but resembles it in other respects, This group of mounds, with the enclosure, has already been described by the author.†

Another locality where the wolf effigy may be seen is at Horicon on the Rock River. This group has been described by Dr. Lapham. We quote his words.‡ (See Figs. 16-17.)

"The mounds are situated on the high banks of theriver on both sides. There are about two hundred ordinary round mounds in the neighborhood. * * * * *

* See Squier and Davis Smithsonian Contributions Vol. I, pp. 130, Plate XLIII. No. 9. See Silliman's Jonrnal, Plate 7, No. 4, 1883.

† See report of State Historical Society, Vol. 9.

‡ See Antiquities. Plate XXXVII; also page 55.

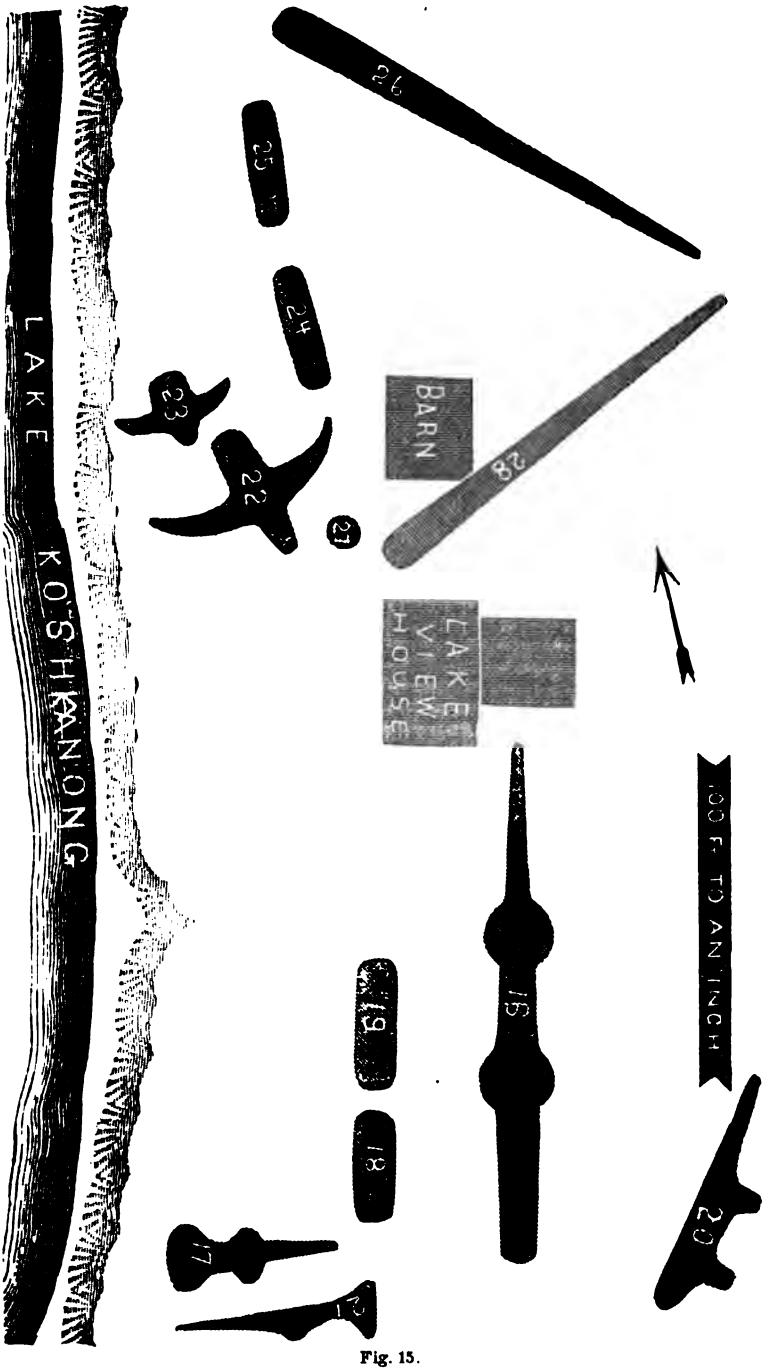

LAKE KO'SHKANONG
BARN
LAKE VIEW HOUSE
100 FT TO AN INCH
26
25
24
23
22
21
28
19
18
17
15
20

Fig. 15.

"There are sixteen mounds of the cruciform variety. They are not placed in any uniform direction, some having the head toward the north, some toward the south. There are two composite figures, one on each side of the river near the centre of the group. If these are animals performing the same action, it is difficult to decide what the animal or the action may be which was intended. Yet it can hardly be supposed that these works could be erected without design. 'The animal form No. 3,' (referring to the fox) is repeated with slight modifications seven times. It may be intended to represent the Otter. The celebrated Sauk chief, Black Hawk, formerly had his residence at this point."

Dr. Lapham seems to have mistaken the effigies calling the birds crosses and the foxes otters, but we quote his words as he plotted and described the two works. The locality is an interesting one, as the proximity to the lake made it a favorite resort to the natives through many generations.

It will be noticed that there are on the two cuts five or six of those bird-figures called crosses; that the figures called foxes may have been intended to represent the fox, the weasel, the otter and the mink, as each effigy is different from the other. The figure with the long, straight tail may have been intended to represent the squirrel, and the effigy of the wolf is on figure 16, at the upper part. We give the two cuts, however, to show the variety which may always be noticed in the effigies.

Other specimens of the wolf effigy may be seen in good preservation. Three of them are still visible on the college grounds at Waukesha. They have been described by Dr. Lapham, but have been recently visited by the author.* Several others were formerly visible at Milwaukee, but these have been destroyed by the growth of the city. Two in the first ward; five in the second ward; three more on the school section, not far from Milwaukee. Several effigies of the wolf were also visible near Sheboygan. Mayville is a locality where effigies of this kind were formerly prevalent.

The *Otter, Squirrel, Skunk, Weasel, Mink, Beaver, Raccoon, Woodchuck* are four-footed creatures, which are sometimes seen in effigy. They are not so numerous or so marked, but their peculiar shapes may be traced amid the other effigies and their peculiarities may be seen. All of them, however, have the distinguishing features which mark all the animals of this class, namely, a long tail attached to a small body, on which two legs only are visible, and they on one side of the body. They are distinguished from one another by the shape of the body. The position of the tail at times also indicates the animal intended. If

* See plates XVIII, XXI, Lapham's Antiquities.

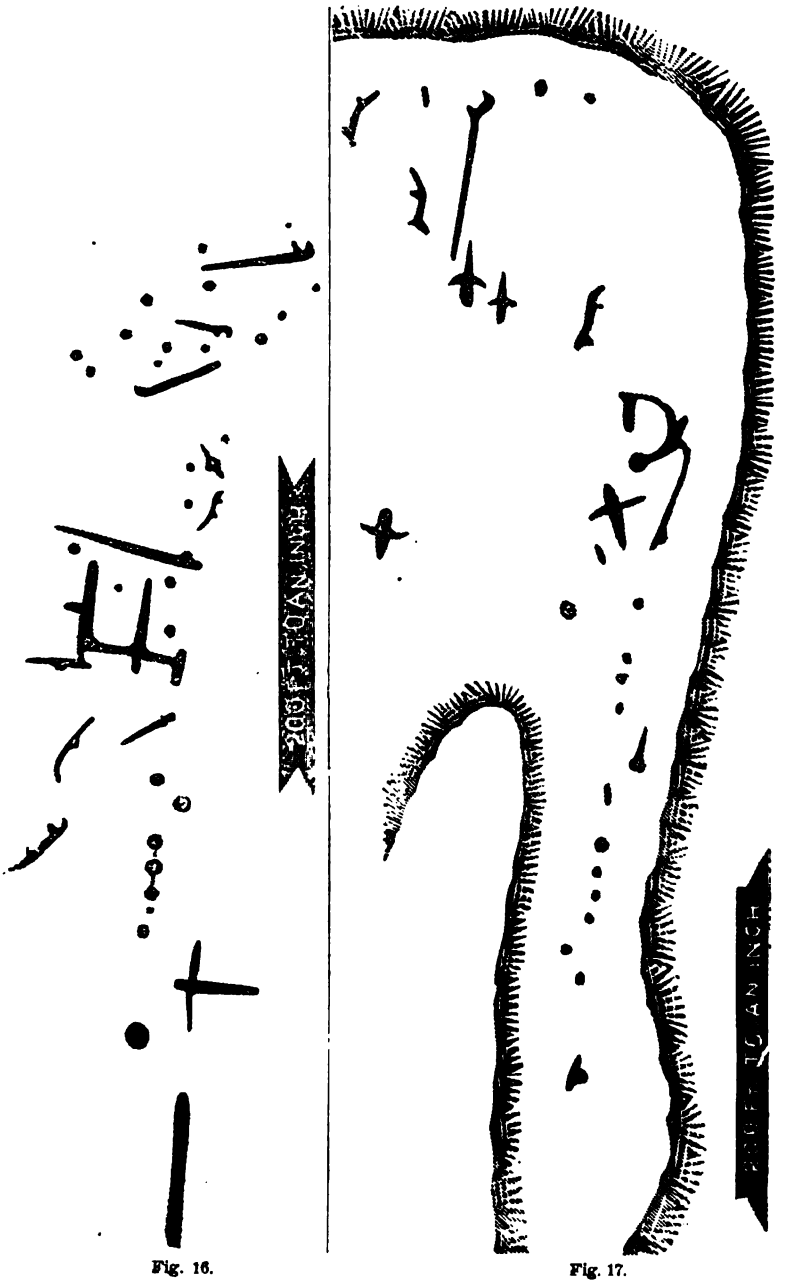


Fig. 16. Fig. 17.

EFFIGIES OF VARIOUS ANIMALS AT HORICON.

one will examine the cuts last given he will see that some of the animals have the tail drooping, the body long and slim, and the head raised. This may be a fox, but the same figure, when the body is heavy, especially in the hind quarters, and the neck and head are small, would better represent the otter. Occasionally effigies are seen where the body is very long and slim, the head and neck slim, but raised, and the tail dragging. Such an effigy we take to be the weasel. Another effigy in this group may be taken for the raccoon or woodchuck, the shape of the effigies being marked by the round or rolling position of the body, without any head visible. Several such effigies may be seen in the foregoing cuts (Figs.16-17). Differing from this is the effigy of the squirrel. It is marked by having the tail erect. A small cut is given which contains the figures of these three animals, the otter, coon and the squirrel (Fig. 18).

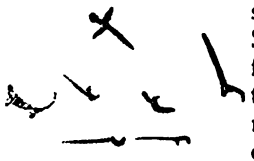


Fig. 18.

We call attention to the peculiarities of each one of these as they may help to distinguish the effigies, and enable us to identify the animals by the effigies. They have not been sufficiently studied by other parties so that their shapes indicate the animals intended. The writer, however, has traced them so often as to be able to distinguish them. The headless animals may be taken to either represent either woodchucks, coons or animals of this kind, and they are to be distinguished one from another by the body being straight or rounded, while the animals with long necks and small heads may be considered as otters, weasels, foxes and wolves, and these are to be distinguished from one another by the shape of the body, whether short or thick or long and slim. Two animals can be distinguished by the position of their tail. The squirrel generally has its tail raised. It is sometimes straight, sometimes crooked at the end again is seen lifted above the head. The skunk, on the contrary, has a short tail curled upward, a small head, and resembles the dog. The effigy might be taken for that of a dog.

With these remarks upon the distinguishing feature of the different animals we proceed to show where the different animals have been seen.

The Squirrel. Dr. Lapham has given the effigies of the squirrel in several positions as seen in different places. At Sheboygan two squirrels are depicted among a group of effigies among which the coon and woodchuck are also seen.*

A squirrel was seen by him near Jefferson associated with one of these headless animals, possibly a coon.† Another is described at Pike Lake.

* See plate 12, Lapham's Antiquities. These effigies Dr. Lapham calls lizards.

† See plate XXXVI, No. 4, Dr. Lapham's Antiquities.

One at Mayville. Two at a point near the Wisconsin River, Town 5, Section 10, Range 7 East.‡

Two squirrels may be seen on the cuts which are descriptive of the works at Lake Horicon, and one on the small cut descriptive of the works at Mayville.

A squirrel may be seen on the ground formerly belonging to Gov. Farwell, adjoining the Insane Asylum, at Madison. It is a very striking effigy. The squirrel is represented as sitting erect on its haunches, with the tail curved back and above its head. The effigy of the squirrel is about 30 feet long, but the tail including all its curves is about 300 feet long.

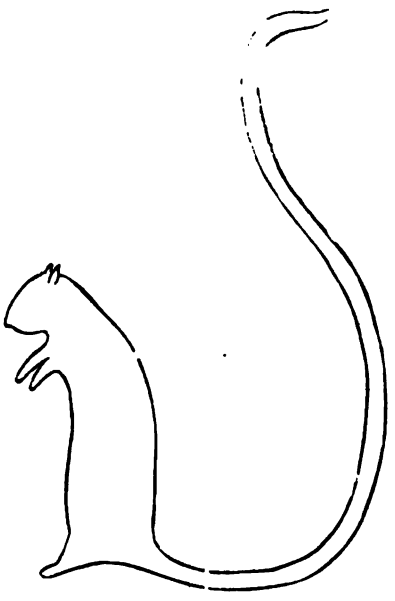


Fig. 20.

The Otter. This is an effigy which is quite common. It was first discovered by S. Taylor, and is described by Squier and Davis.*

The situation of this particular effigy is near the Blue river in the Wisconsin valley. We give a cut of it. The length of the animal is 57 feet; length of head and neck about 30 feet; length of tail, 45 feet; width of body, 15 feet. Other effigies similar to this kind may be seen on the cuts descriptive of the work at Horicon. It is, however, sometimes difficult to distinguish this effigy from that of the fox, though Dr. Lapham, who has studied the mounds at this place, frequently mentions the otter, and says that this figure which appears so often among the mounds is probably the otter. We have called it the fox. The narrow neck and head, perhaps, should distinguish the otter from the fox, and so we grant Mr. Lapham's position.

Fig. 21.

The Weasel is another effigy often found among the emblematic mounds. The writer has seen one such effigy near Green Lake. The weasel appears to be springing upon a bird which is within a few feet of its mouth and which is fluttering to escape. Both animals are transfixed and appear very strange as they retain these striking attitudes. The mounds convey the idea as distinctly as

‡ See plate XLVIII, Lapham's Antiquities.

* See Smithsonian Contribution, Vol. I, Plate XLIV., No. 6.

if they were a picture. A specimen of the weasel was seen by the writer at Baraboo during the recent trip. The dimensions of the animal are as follows: Total length, 263 feet; head and neck, 30 feet long; the body, 100 feet long: tail, 133 feet long The weasel may be recognized in the cuts of the works at Horicon.†

The Coon. This effigy is depicted by Dr. Lapham in several localities. The mounds described as situated near Milwaukee, may have been intended to represent wolves, but they lack the head, and so possibly might have represented coons instead. Several mounds at Lake Winnebago resemble coons as much as they do wolves. One mound in the group at Sheboygan was evidently intended to represent this animal. The writer has seen the effigy of a coon at Green Lake. This effigy, however, differs from any other which has been described. It represents the coon as just having lighted upon the ground from off a tree. The animal is sprawling, with four legs bent on either side of the body, the head flat and tail curved. The effigy of a coon may also be seen among the group of mounds at Horicon. (Fig. 16.)

We give a cut here which will show the distinguishing marks of these effigies. It is a cut of mounds found at Waukesha.

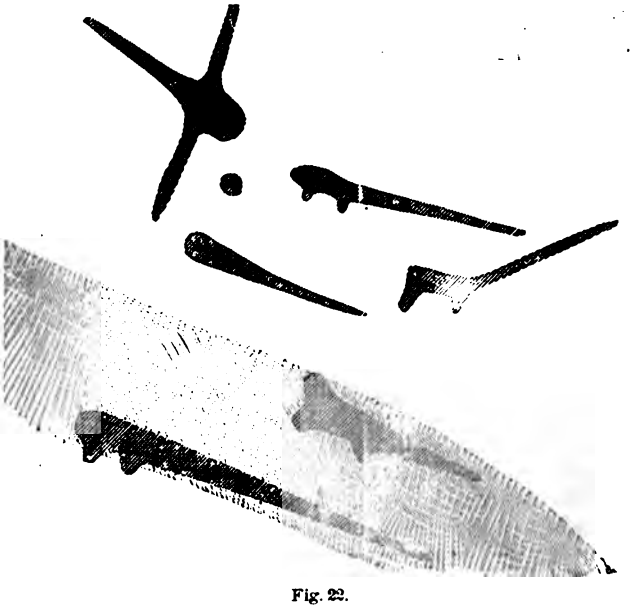


Fig. 22.

Of the seven effigies in this cut the first may be considered as that of a wolf, the second that of the panther, the third that of the squirrel, the fourth the coon, the fifth an effigy of a catfish,

† See also Lapham's Antiquities, Plate XXXVII.

the sixth a bird. This group has been described by Dr. Lapham. He says: "It is three miles west of Mayville. The road from Mayville to Horicon passes directly by it, it will be observed that all the figures of this group have their heads in one generally southwest direction, except the cross which, as is almost always the case, has a course almost directly opposite. From the extremity of the longest mound which is on the highest ground, a general view of the whole may be seen."

ABRAHAM'S OFFERING OF ISAAC.

BY REV. J. N. FRADENBURG.

Ur, while yet the world was young, was a capital city. The soil of Chaldea was the gift of the Euphrates, and was of unrivalled fertility. Professor Rawlinson says: "This region was amongst the most productive on the face of the earth; spontaneously producing some of the best gifts of God to man." Perhaps here was the very spot where the Lord God "planted a garden." Dr. Birch believes it to have been "the cradle of Semitic civilization, highly civilized and densely populated at a time when Egypt was still in its youthful prime." Semitic, Hamitic and Japhetic peoples were very early found dwelling together in this garden of the Lord. Ur was a walled town, several centuries old, at the time when Terah and his family dwelt there.

The moon-god was the presiding Deity of the city. With great ceremony the royal "monthly prognosticators" worshipped the "light that rules the night." Abraham often watched them as they chanted their hymns, offered their sacrifices, observed the omens, and held courts of justice. So religious were the inhabitants of Ur, that the very bricks were stamped with devotion. The worshipper praised the moon-god in hymns which ascribed to him many noble titles. He was called "Lord of Rest"—the Sabbath rest. One of these hymns has been called a "magnificent ode of pristine idolatry." Other divinities were worshipped, even the whole host of heaven. Here scripture informs us, "Terah, the father of Abraham, and the father of Nahor, served other gods." Amid this rank polytheism, where the One God, though perhaps dimly recognized, was practically ignored, Abraham received his early religious education.

There were many bloody sacrifices offered to the gods in this quaint old city. A hymn exultingly declares that "blood ran like water." Nor were human sacrifices wanting. The men of Sepharvaim on the other side of the Euphrates, whose temple was built by the king of Ur, "burnt their children in

fire to Adrammelech and Anammelech, the gods of Sepharvaim" — the sun-god and goddess. The earnest, though darkened soul thought to propitiate the gods by offering his own children upon the bloody altar. We learn from an inscription that it was a custom for a man to give "his offering for his life, and astronomical signs are named under which it would be propitious to sacrifice a son "on the high places." There is also mention of the sacrifice of the first born son, and again the sacrifice of the only son. The question of the prophet; "Shall I give my first born for my transgression; the fruit of my body for the sin of my soul," was answered in the affirmative in Ur, when Abraham dwelt there a boy. Perhaps Terah's family connections brought him much in contact with the teachings of Chaldean priests. The Talmud says that Terah's wife was "the daughter of Karnebo;" *Karnebo* is "servant of Nebo," one of the Chaldean gods.

Terah joined in the great Semitic Immigrations, and led his family six hundred miles to Haran, another ancient and idolatrous city. So thoroughly settled were the inhabitants of Haran in idolatry that as late as the fifth cenutry of the christian era, Sabæan worship was still practiced. That the family of Terah uttered no distinct protest against this gross superstition we may be quite sure, whatever Abraham's personal and private views may have been. In Haran, Terah died and was buried, and Abraham assumed the leadership of the family.

With great possessions and with a great retinue, perhaps more than a thousand persons in all, Abraham, at the command of God, journeyed to Canaan. The religious surroundings of Abraham were worse than ever before. The pictures which remain to us of the religion of the Canaanites are frightful in their gloom and awful in their cruelty. Lenormant says: "Around this religious system gathered, in the external and public worship, a host of frightful debaucheries, orgies and prostitutions, in honor of the deities, such as we have already described at Babylon. No other people ever rivalled them in the mixture of bloodshed and debauchery with which they thought to honor the Deity." Creuzer declares: "This religion silenced all the best feelings of human nature, degraded men's mind by a superstition alternately cruel and profligate, and we may seek in vain for any influence for good it could have exercised on the nation." Human sacrifices still reddened the altars.

In Egypt, whither Abraham journeyed, there was a purer religion; but if at this time Egypt was under the rule of the Shepherd Kings, the Hyksos or Hittites, as is more than probable, that religion was at its worst. Professor Maspero says: "The Egyptian religion, without being officially adopted, was tolerated, and the religion of the Canaanites underwent some modifications to avoid hurting beyond measure the susceptibility of the worshippers of Osiris." If we may believe Man-

etho, the Hyksos burned human victims in the fire, particularly during dog-days.

Certainly no young man could be educated in a school more unpropitious than that from which Abraham graduated. Only the subject of human sacrifice has been kept in view in this article, but there were not a few other revolting beliefs and practices which must have exerted a powerful influence upon his mind. It were impossible properly to estimate either the importance or the extent of his supernatural teaching.

Abraham struggled long with great problems. His soul was stirred, and in its profound depths thoughts big with æternal issues, surged throughout the years. His deep religiousness, his all-consuming earnestness, propounded the question again and again, "Shall I give my first-born for my transgression?" No more priceless gift could have been offered to the gods. Such sacrifices were common among many ancient peoples. The most pious, the most favored of heaven, at Ur, at Haran, probably also in Egypt, certainly in Canaan, had demonstrated their piety by such noble sacrifices. A devotion which will part with the richest treasure surely must be acceptable to God. Abraham hesitated. He could not have been absolutely free from the prejudices of race and education. That his descendants were liable to run into this awful idolatrous practice, their history sufficiently teaches. With Abraham the question of human sacrifice remained unanswered. But the question shall be answered from heaven with a solemnity at which the world's heart shall stop beating while it listens.

The impression made upon Abraham's mind deepens. The decision, the preparation, the journey up the mountain-side, the conversation on the way, the silence, the altar, the wood laid thereon, all show Abraham's willingness,—"Abraham stretched forth his hand, and took the knife to slay his son. And the angel of the Lord called unto him out of heaven, and said, lay not thine hand upon the lad, neither do thou anything to him: for now I know that thou fearest God, seeing thou hast not withheld thy son, thine only son from me." A new light breaks in upon Abraham's soul. He now knows the meaning of sacrifice. A ram is offered which fully symbolizes his perfect consecration to God. The Abrahamic church at its very infancy has passed a dangerous crisis and is saved.

CORRESPONDENCE.

NEW YORK COPPER IMPLEMENTS.

For the American Antiquarian:

The copper implements of New York, which have come under my notice, present marked differences to many of those found in the west, and indeed have their own peculiar features in different places, indicating thus local fashions and origin. I have met with none which have sockets for the handles, three being affixed either by a broad or a tapering tang. Some figures, sent me by Dr. D. S. Kellogg, of Plattsburgh, N. Y., of those found by him near that place, have an expanding tang, which I have never seen in Onondaga county, where spearheads all have a sharp, contracted tang, generally thicker than the blade. In the one case they probably have been tied upon, and in the other inserted in the end of the shaft. The copper celts of Onondaga county, too, are mainly those massive, ridged forms, which to a novice seem to have been cast in a mold. Fig. 227 of the Smithsonian collection, is a good typical form of these.

The figures mentioned, from Lake Champlain, embrace a curious copper knife of native metal, which has a general measurement of 2½ by 1½ inches, but a side projection at one end increases it to two inches in width there. The edge is curved, and I suppose sharp. Three copper spears have broad and blunt tangs, and two of these are broadest at the end. Fig. 229 of the Smithsonian collection, from Vermont, is of the same type, but with a shorter base. All three are each about an inch in width, and are respectfully 4¼, 3⅝, and 3¼ inches long. Another differs greatly, and is very much like one found on the Seneca river, New York. It is ridged on one side, and has a sharp, contracted tang, notched where the barbs of a spear commonly occur. The dimensions are 4½ by 1¼ inches.

The spearhead resembling this, found in Onondaga county, New York, near a prehistoric site, is much larger, being 7½ by 1½, with a considerable thickness. It is pointed at each end, flat on one side, and longitudinally ridged on the other; the sides of the ridge being slightly concave. Lengthwise it is a little curved, and the sides above the tang are notched, as in the one last described. Two other spearheads of this general locality also have a contracted and sharp tangs which are somewhat thicker than the thin blade of the spear. Fig. 228 of Smithsonian collection, from Lake Superior district, is much like this form. Each is nearly an inch wide, and they are respectively 4¾ and 5 inches long. Two others, like these, have been found near by, of which I have no figures.

A different class of implements comprises the celts and

gouges, some of large sizes. One fine implement is 11½x1½ inches, and is ⅞ of an inch thick. This is flat on one side and ridged on the other, becoming thinner towards the ends, one of which has a sharp cutting edge. The lateral edges are nearly parallel, and the weight is two pounds and fourteen ounces. Another is triangular, flat, and thinnest at the ends, and has a rounded, sharp cutting edge. Another, again, is ridged, slighty triangular, and with the smaller end pointed. The gouge-like cutting edge is large, rounded, quite sharp, and expanded beyond the general outline. It is 5½ inches long, nearly 1½ wide in the widest part, aud over half an inch thick. Fig. 227, Smithsonian collection, from New York, is much like this.

One triangular celt has the point bent over, thus shortening it, but with no other change. It is still 5½ inches long and 1⅜ wide, by half an inch thick. The expanded cutting edge of this is also rounded. Another celt, much like the first described, with parallel sides but with pointed ends, is both thick and ridged. The size of this is 6⅞ by 1½ inches. A section of any of these would not be a triangle, but a compressed pentagon.

A gouge-like copper celt, now 5¾x1 inch has been unfortunately shortened and altered. Some of the natural irregularities, however, yet remain. It has a wide cutting edge, and seems to have had a longitudinal ridge on one side, as in most other cases. A very heavy copper gouge was hollowed throughout, much like some stone gouges. It is 7½ by 1¾ inches, and for the most part, has parallel faces.

One thin copper bead occured on the prehistoric site on Seneca river, near which was found the large ridged spearhead. It is of interest mainly because the other articles mentioned were not found on town sites. It is a thin piece of copper, rolled into a tube, about one inch in length by a quarter of an inch in diameter, a larger article which might be a bead or sinker, is two and one half inches long by three-quarters of an inch in diameter, and is of a piece of native copper rolled together, leaving an orifice of nearly three-eighths of an inch. Fig. 234 of Smithsonian collections, from Rhode Island, would fairly represent the first of these by reducing the length.

All those thus far described are of native copper, with granulated, striated and hammered surfaces, but some other articles of a later day, are not without interest. Besides the occasional brass kettles, where the Onondagas lived 200 years ago, are even now, abundant shreds of thin sheet copper, brought there by Europeans to be made into ornaments. Pendants may still be picked up, formed by rolling this into hollow cones. Copper, brass and iron arrows, however, are not so frequent, though occasionally found. The French governors of Canada distributed iron arrow-heads profusely to the Indians, but I remember no mention of copper or brass. One slender iron arrow-head

was found on the Seneca river, but so little corroded that it hardly seems of early date. It is 3 by ¾ inches, with a rounding point, and has a notched base, with two holes above the notch. One of brass, from the Oswego river, is over one and one-half inches long, and is triangular, with a sharply barbed base. It was cut out of a thin, flat piece of brass, but not otherwise sharpened at the point. The same is true of another, of brass, from Pompey, which is simply triangular, and nearly an inch and a quarter long. Another more slender form of copper from the same site, is one and three-fourths inches long. These triangular arrows, without barbs, are much like some perforated copper ornaments of the same period. In outline they are like the arrow-heads found with the so-called "Skeleton in Armor," at Fall River.

Most of the above have been found in the last half-dozen years, and suggest the thought that a great number of copper implements may have been lost through ignorance or inattention. Some of these were sold by the finders as old copper, and would soon be in the crucible but for the better knowledge of others. Undoubtedly this loss has often happened. A large part of the great quantities of metal articles of the pre-historic period in New York thus perished, and the earlier and ruder implements found at intervals, naturally shared the same fate. Many things lead us to the conclusion that copper implements, though always costly, were more generally used by the Indians than their known remains would indicate; while on the other hand, it may be doubted whether they were at all used in some parts, by the resident pre-historic and savage tribes, especially of New York. Their absence from many extensive sites would cause us to think this.

A few words may be added on some peculiarities of implements of native copper. Nearly all that I have seen from New York have irregular protuberances, generally running lengthwise of the implement, and showing plain marks of hammering, which is not always the case on the part of the surface which is less raised. Two heavy celts and the large spear-head are granulated on the surface, and have rounded edges on the flat side, as though they had been cast in an open mould of sand. The probability is that they have been somewhat corroded, leaving the hardest portions of the original surface. Still, whatever we may say of corrosive agencies, some well wrought cutting edges have successfully resisted them, and are almost as smooth and keen as ever. This may be due to the soil in which they were preserved, as quite a difference appears when they are compared in this way.

W. M. BEAUCHAMP.

BALDWINSVILLE, N. Y.

CENSUS OF THE CLALLAM AND TWANA INDIANS OF WASHINGTON TERRITORY.

American Antiquarian:

The tenth census taken between November 29th, 1880, and May 1st, 1881, was by far the most complete one which has ever been accomplished. Both the Indian and English name are given, and the meaning of the Indian name was asked for; but, as is the case with other tribes in this region, no such meaning has been found, except in a very few instances — their names seeming to be like ours — perhaps they had a meaning ages ago, but if so the present Indians do not know what they are.

CLALLAM INDIANS. These are scattered on the western and northern shores of Puget Sound, from Seabeck to Clallam Bay. They number four hundred and eighty-five persons, of which sixty-two were absent on the English side of the straits of Juan de Fuca. There are one hundred and fifty-eight men, one hundred seventy-two women, eighty-six boys and sixty-nine girls, or two hundred and forty-four males and two hundred and forty-one females.

Ages. Fifty-six were estimated to be under five years of age, forty-four between five and ten, eighty-two between ten and twenty, sixty-four between twenty and thirty, sixty-two between thirty and forty, seventy-four between forty and fifty, sixty-four between fifty and sixty, twenty-eight between sixty and seventy, and eleven over seventy, none being supposed to be over seventy-five.

Residence. Six were on or near the Skokomish reservation, ten near Seabeck, ninety-six at Port Gamble, six at Port Ludlow, twelve at Port Townsend, twenty-two at Port Discovery, eighteen at Sequim, eighty-six at Jamestown, thirty-six at or near Dunginess, fifty-seven at Port Angelos, sixty-seven at Elkwa, twenty-four at Pyscht, forty-six at Clallam Bay, and three at Hoko.

Inter-marriage. There are two hundred and ninety full-blooded Clallams, and the rest are intermingled with eighteen other tribes. They were traced back only to the grandparents of the older ones. Thirty were part Cowichan, twenty-eight were mingled with the Makahs, twenty-seven with the Twanas, twenty-three with the Victoria Indians, twenty with the Quillehutes, sixteen with the Chemakums, ten with the Samish Indians, ten with the Nanaimos, nine with the Skagits, five with Snohomish tribe, three each with the Nootkas, Lumis and Port Madisons, and one each with the Sokes, Nittinats, Puyallups, and Bellingham Bay Indians. Quite a number have the blood of three tribes in their veins, and a few that of four. Fifteen are part white.

Health. Twenty-seven of them were so sick as to be unable to perform the ordinary duties of life, five of whom were of old age. Three were maimed or deformed, five blind, all of whom were old ones, four half blind, and one about a quarter idiotic. One hundred and twenty-six had been vaccinated, and the rest had not, except eighty-four, about whom it was impossible to learn. During the year previous to October 1, 1880, there had been eleven births and nine deaths.

Education. Forty-one have been in school during the past year, forty-nine can read and forty-two write. Thirty-two have studied arithmetic during the year, twenty-nine geography and one grammar, One hundred and thirty-five can talk English, of whom eighty-nine are adults, sixty-five have no Indian name.

Marriage. There are one hundred and twenty-three men and wives, of whom thirty three have been legally married. Five men have two wives each.

Property. They have ten horses, thirty-one cattle, five sheep, ninety-seven swine, five hundred and eighty-four domestic fowls, one hundred and thirty-two dogs, one hundred and two shotguns, sixteen rifles, eleven breach-loading rifles and eight pistols.

Employment. Thirty-four are laborers in saw-mills, twenty-two are farmers, eighty are fishermen, twenty-three are laborers, forty are mat and basket makers (women), seventeen are sealers, fifteen are canoe men, six are canoe makers; there are six hunters, three Indian police, eleven medicine men and four medicine women, one carpenter, two wood choppers, and one blacksmith.

Land. Twenty-eight own five hundred and seventy-six acres of land with a patented title, four own four hundred and seventy-five acres by homestead, and four are on six hundred and forty acres, which they expect soon to homestead. Twenty-two persons cultivate forty-six acres, who represent one hundred and four persons in their families.

Products of labor. During the year they raised two thousand and thirty-six bushels of potatoes, fourteen tons of hay, twenty-six bushels of oats, two hundred and fifty-eight bushels of turnips, one hundred and forty-eight bushels of wheat, twenty bushels of apples, five bushels of plums, four bushels of small fruit. They cut two hundred and fifty cords of wood, received $1,994 for sealing, $331.95 for salmon, from the cannery at Clallam Bay, and $345 for fish elsewhere; $1,000 for work at the Port Discovery saw-mill.

Buildings. They have one hundred and thirteen frame houses, valued by estimate at $5,650.00; four log houses, worth $100.00; twenty-nine out-houses, as barns, chicken houses and canoe houses, two jails and two churches.

Sources of support. It was estimated that ninety-six obtain fifty per cent. of their food as civilized food; that of one hun-

dred and eighty-four persons is sixty-five per cent.; of twenty, is seventy-five per cent.; of twelve, is eighty per cent.; of twenty-two, is eighty-five per cent.; of one hundred and thirty-eight, is ninety per cent.; of three, is ninety-five per cent.; of seven, is one hundred per cent., and five in school are supported by government.

Two hundred and eleven persons are out of the smoke when at home.

TWANA INDIANS. These number two hundred and forty-two persons, of whom seventy are men, eighty-four women, forty-one boys, and forty-seven girls—one hundred and eleven males and one hundred and thirty-one females.

Ages. Thirty were estimated to be under five years of age, eighteen between five and ten, forty-eight between ten and twenty, forty between twenty and thirty, thirty-nine between thirty and forty, twenty-four between forty and fifty, twenty-five between fifty and sixty, fourteen between sixty and seventy, three between seventy and eighty, and one at eighty.

Residence. The residence of forty-nine is at or about Seabeck, Colseed, and Duk-a-boos, and of one hundred and ninety-three on the Skokomish reservation.

Inter-marriage. There are only twenty full-blooded Twanas, the rest being intermingled with the following fifteen tribes: sixty-four with the Clallams, fifty-two with the Skwaksins, forty-three with the Chehalis Indians, twenty with the Nisqually tribe, nineteen with the Snohonnush Indians, sixteen with the Port Madisons, eleven with the Puyalups, nine with the Chemakums, six with the Samish Indians, seven with the Duwamish Indians, two with the Skagits, and one each with the Victoria, Klikitat, Skewhamish and Snoqualmie Indians. Twenty-four are part white.

Health. Two were so sick as to be unable to attend to the ordinary duties of life, and three blind from old age. Sixty-three have been vaccinated. During the year there were eight births and three deaths.

Education. Twenty-nine have been in school the past year; thirty-five can read and thirty can write. Thirteen have studied geography, nineteen arithmetic and five history during the year. Forty-seven males and twenty-one females talk English. Thirty-seven have no Indian name.

Marriage. Twenty-three couples have been legally married and thirty-four have not. There are sixty-seven families.

Property. They have eighty horses, twenty-eight milch cows, twenty oxen, forty other cattle, forty-four domestic fowls, fifty-six dogs, nineteen shotguns, sixteen rifles and one pistol.

Employment. Forty-two are farmers, four are carpenters, there are two blacksmiths, four laborers, seven hunters, twenty fishermen, twenty-one lumbermen and loggers, one interpreter,

one policeman, six medicine men, seven washer-women, six mat and basket makers and one assistant matron.

Land. Forty-seven of them, representing all except about forty of the tribe, hold two thousand, five hundred and ninety-nine acres of unpatented land, all but forty acres of which is on the reservation.

Products of labor. They have raised eighty tons of hay and four hundred and fifty bushels of potatoes during the year.

Buildings. They own sixty frame houses, valued at three thousand dollars. All but about twenty-five are off of the ground and out of the smoke.

Sources of support. These estimates were made by two persons who differed very widely in their calculations, but are as follows: Eight obtain twenty-five per cent. of their subsistence from civilized food, two get thirty per cent., that of four is forty per cent., that of twenty is fifty per cent., of nine is sixty per cent., of twenty-five is sixty-five per cent., of three is seventy per cent., of fifty-two is seventy-five per cent., of seventeen is eighty per cent., of fifty-seven is ninety per cent., of seven is ninety-five per cent., of fourteen is one hundred per cent., and twenty-four who are in school are supported by government.

M. EELLS.

SHOKOMISH, WASH. TER.

PREHISTORIC REMAINS FROM MISSISSIPPI.

Editor Antiquarian:

Some time during the spring of the present year, a contractor on the Memphis and Vicksburg railroad, found, when grading about twenty miles south of Memphis, and in De Soto county, Mississippi, some specimens of prehistoric pottery and a number of skeletons. The locality is about three miles from the Mississippi river, and a short distance away is, or was an Indian mound. These specimens were not found in the mound, which when cut into was found to obtain nothing, but a little way to one side.

The pottery consists of six vessels, all different. Two of them are plain and have no ornamentation whatever. Two others are ornamented with four scrolls, one running into the other. One of these is almost globular, with the four scrolls ornamenting four bulbous parts. The other is round, and with a neck or rim about one and a quarter inches high. In a space between two of the scrolls on this vessel is the number 1651 roughly cut in. The fifth piece is quite large, with a round bottom, eight and a half inches in diameter in the widest part, about five inches deep, with a rim two and a half inches high. The sides of this vessel are ornamented also, with scrolls, as in the other cases, running together, but simply scratched on the surface, instead

of being deeply cut as in the former cases. This vessel also has a number on it, viz.: 1708. The sixth vessel is the most curious of all. It is small, about four inches in diameter, and about four inches in depth. It has four legs upon which to stand, on one side just below the top, the neck and head of a turtle, and on the other side and at the bottom a little tail curled underneath. It is evidently meant to represent a turtle. I questioned the man about the numbers or dates on the two vessels, and he insisted that they were there when he took them out of the ground, and he had washed the dirt out of them.

But the most curious and interesting things about the find were two skulls. In one there is a marked flattening of the occipital region, and a correspondent development of the frontal. This shows most when the lower jaw is placed in position, when the facial angle slopes back very rapidly. The other skull is almost exactly like the figure in Squier & Davis' Ancient "Monuments of the Mississippi Valley," plate XLVII, p. 288. This, the authors say, is "the only skull incontestibly belonging to an individual of that race (i. e., Mound Builder,) which has been recovered entire, or sufficiently well preserved to be of value for purposes of comparison ever taken from a hill mound." If we are to judge at all from the contour, we have in this skull from Mississippi as much of a mound builder as the one from Ohio. From the locality, and from the peculiar form of the other skull, we might be justified in considering the remains to be those of the Natchez Indians, who, as we know, had the habit of compressing the bones of the head. As for the numbers on the vessels I can offer no explanation. I can see no reason for doubting the words of the man who found them, though it is *possible* they were put on in the hope of enhancing their value. But about the skulls there can be no question. They, at least, are genuine, and undoubtedly old. I leave the problem as to who they were, and to what race they belonged, for others to decide. I can merely state the facts as I know them. A string of wampum was found around the neck of one of the skeletons, and a flint arrow point and a polished granite skin dresser were found in the same vicinity. JOSEPH F. JAMES.

A STONE PYRAMID IN SOUTH AMERICA.

Editor Antiquarian:

Several months since I sent you No. 6 of the "Native Races of Colombia," but up to time of leaving that country, I had not received any acknowledgment of the receipt of that No. 6 by you. As I was about to leave, I learned for the first time, of the existence of a stone pyramid, or more properly perhaps, a

cone, within about sixteen leagues of my location during the past three years, say about in latitude two degrees and forty minutes north and near seventy-seven degrees west. My informant, a very reliable and intelligent gentleman, described it from memory, as being a cone, having about three hundred feet diameter at the base and as being about the same in height.

My informant stated that the cone was formed by another rim of cut stone of immense size, say two hundred cubic feet, more or less to each, and so nicely fitted that the joints would not admit the blade of a knife. A relative of the gentleman's mother, undertook, some thirty or forty years since, to take the work down, beginning at the top. In removing some twenty feet there were found a few golden figures, among which my informant remembers golden frogs. Also he remembers earthen vessels of various sizes with ornaments representing the human face and other things.

He also remembers that the cement uniting the layers of stone was very hard near the outer edges, but in the center, before exposure to the atmosphere, it was soft and plastic, like warm wax, but after an exposure to the atmosphere of twenty-four hours, it became hard as stone. I give you the facts as related to me by my informant, who gave simply his recollections of the matter after a lapse of near thirty years. My son, who remains in the country, will visit this interesting relic and verify the above statements.

I shall most likely visit Chicago during my trip, in which case I will do myself the honor of calling upon you. I shall have with me some sixty or more wood cut impressions of curiosities, illustrating the manners and customs of the Chibcha and other nations, and hope to have as well photographs of statues, engraved stones, etc., to the number of thirty or more.

Before leaving, I engaged a photographer to take photographs of all the statues in South Toteina, and my son will try to get a picture of the cone or pyramid as well.

Very respectfully yours,

NEW YORK, August 10th, 1883. E. G. BARNEY.

METHOD OF WRITING DAKOTAH.

REV. S. D. PEET:

My Dear Friend — Your letter, with one of Mr. Dorsey's, is received. The latter I return. You ask me what I think of it — that is, his method of writing Ponca and Omaha. As I said to A. L. Riggs, in answer to the same question, "I do not know enough of Ponca and Omaha to express an opinion. But I can't get away from the conviction that Mr. Dorsey is using an unnecessary number of marks." It seems to me it will make a difficult language to learn to read. However, perhaps he only means to use all those marked letters in the dictionary, and

not in the language as commonly written. In regard to the compromise of which he speaks: The Dakota language was written more than forty years ago. The *clicks* c, k, p and t, have been used ever since, and they exist in Ponca and Omaha just as in Dakota.

Then in regard to the peculiarity of sound which occurs in Washaka, *strong*, and other words, we do not use it in ordinary writing. The Dakotas do not need to have it indicated. It is properly a *hold* or *suspension*. The hold is immediately after the "sh," as though it were Wash-a'-ka. Whether the vowel following is at all affected by it is a matter of doubt with me. I have no objection to Mr. Dorsey using whatever marks he thinks best to indicate it.

Yours truly, S. R. RIGGS.

BELOIT, WIS., July 30, 1879.

THE DESTRUCTION OF MOUNDS.

SMITHSONIAN INSTITUTION, BUREAU OF ETHNOLOGY,
WASHINGTON, D. C. January 1, 1884.

DEAR SIR — Rev. S. D. Peet complains at the wanton destruction of mounds without preserving proper descriptions of them, and I certainly agree with him in this respect. But he is laboring under a mistake in regard to the work done by the assistants of the Bureau of Ethnology. We have 105 drawings of the mounds, mound sections, and groups, ready for the engraver, among which are twenty of groups and mounds of southern Wisconsin, including an original one of the Elephant mound. Most of the twenty are of groups well drawn and differing considerably from any hitherto published.

Quite a number of the groups and mounds found in Arkansas were drawn by a good artist taken to the field solely for this purpose.

We make it a rule that our field assistants shall give plats of groups and sections of the mounds opened, and full notes of the topography of the immediate vicinity, so far as the same may seem to have any bearing on the object of building or the use of the mounds, or the reasons for selecting the locality.

In this respect those of southwestern Wisconsin have received particular attention, as will be seen when the report of the explorations is published.

We have even succeeded in obtaining drawings of some destroyed Wisconsin mounds, made while they were yet undisturbed.

A good-sized model in plaster of a southern group has been made showing the enclosing wall, the mounds and "house sites."

Very Respectfully,

PROF. S. F. BAIRD, CYRUS THOMAS.
Secretary Smithsonian Institution.

ANTIQUITIES OF HAMILTON COUNTY, IOWA.

Editor American Antiquarian: In response to your request to give you any items for your excellent magazine which I could gather in this region, I have to say: In the early settlement of this city — 1857 or 1858 — Hon. Hon. John D. Maxwell, then county judge, erected a house in what is now very near the center of our population. When he dug his cellar, he came upon a large deposit of human bones two feet below the surface, representing at least twenty-six distinct skeletons. In what posture, or what relation to each other they were buried, I am not now able to state, except that they were buried in a heap as though buried at one time, after a fight. No articles were found with them except some round beads, made of material like soap stone. These beads were about one-half an inch in diameter. One of the skulls was very large and very thick, possibly three-eights of an inch. The jaw bone would go outside of an ordinary man. These bones were taken up and buried instead of being saved for some ethnological collection.

A man by the name of Cross, a spiritualist, also built a house in those early days, on a knoll in the southeast part of the town. In digging his cellar he found three skeletons lying together, about thirty inches below the surface.

The opinion seems to prevail with the finders of these relics, who took no pains to preserve them, that they were the remains of Sac and Fox Indians, who used to roam through these regions. My own opinion, however, is that they would date from the times of the mound builders.

On the north side of our town plat there are now five large mounds which have never been disturbed. They stand on a bluff some forty feet above Boone river, and in a line running from northeast to southwest. On the north side, earth was evidently carried several rods to heap up these mounds, for there is a hollow which is generally damp and swampy. The ground here is covered with a dense growth of young oak timber, which has doubtless kept these mounds from being disturbed. They will be carefully investigated one of these days, and I am convinced will be found to contain something of interest.

On the Des Moines river, six or eight miles above Fort Dodge, there are several mounds, some of which have been opened. In one of these our late Adjutant General N. B. Baker, found the coronal arch of a mound builder's skull—the temporal regions having entirely fallen away. Stating the occurrence to me in the spring of 1876, he said that there were four of these mounds, placed two to four miles apart, on high bluffs commanding the valley. He was of the opinion that when they were built, the valley below was a lake with a narrow outlet at

the south end. A signal fire at one of these points could be plainly seen at all the others.

In 1857 I saw thirteen large mounds on a high river terrace in Emmett county, this state. They stood in a row due north and south. The largest was six feet high, and they gradually lessened in size until the smallest was only about eighteen inches above the surface. I have never heard that they have been opened.

We find in this region some articles of archæological interest, though I cannot say that they are very plenty. I occasionally meet with stone, arrow and spearheads in the gravel beds of America. These generally are much weathered or water-rolled and have a very old look. Flint flakes and scrapers are occasionally picked up in the plowed fields. About a mile above my residence a square tablet of polished stone was found four or five years ago. It was about two and one-half inches square and one-fourth of an inch thick, with two holes on opposite sides or under. I presume a thorough search of the gravel beds along the river might be rewarded with many interesting finds.

It is not exactly within the scope of your magazine to record palæontological finds, but I may say that we often meet with the bones of primitive bisons and horses in our river gravel beds. Whatever has come into my hands I have promptly sent to Prof. S. F. Baird for the National Museum.

Very truly yours, CHARLES ALDRICH.

WEBSTER CITY, Iowa, March, 1883.

ARCHÆOLOGY IN OHIO.

Editor of American Antiquarian:

DEAR SIR — Permit me to congratulate you upon having secured a subscription list of sufficient extent to enable you to continue the publication of the AMERICAN ANTIQUARIAN, and also upon the fact that you have succeeded in securing the aid of so many able writers, whose contributions have assisted you largely in giving us such a valnable, highly creditable, scholarly magazine. I trust its prospects will grow brighter, its circulation increase from year to year, and its value grow greater and greater.

Congratulations are tendered in view of the increased interest manifested in various portions of Ohio, as shown, not only by the opening of ancient works hitherto unexplored, as in Clinton county, in Madisonville (Hamilton county), in Muskingum county, and elsewhere; but also in the repeated and more thorough excavations into old and well-known works of the mound builders, and their contents described and made known. The

results of these recent investigations having been made more or less public, has tende l to stimulate further explorations and to call attention more and more to the ancient races of the Ohio valley, whose characteristics by these means, becoming better and more widely known, and whose works, multifarious as they are, are being gradually better and better understood, constantly increasing interest is manifested in them, and increased attention is given them. By such means, and through instrumentalities such as these, facts bearing on, or pertaining to, Ohio archæology are rapidly multiplied, and thus the stock of archæological knowledge is gradually augmented. These facts it is the manifest duty of the ANTIQUARIAN to preserve, and that knowledge to collect and communicate to others. The promation of archæological investigation being one of the leading purposes of the journal everywhere, it is not unreasonable to indulge the hope that great success will attend your labors.

The evidence of increasing interest in the works of our ancient races is found in the multiplication of books, portions of books, pamphlets and magazine and newspaper articles, also lectures devoted specially to them. I will state the fact that one of the faithful and intelligent students of Ohio antiquities, Rev. J. P. MacLean, lately published a series of archæological papers in an eastern denominational Quarterly Review. And another (Hon. H. A. Shepherd), I am informed, will devote several long chapters to description of our ancient works, in his forth-coming history of our own state. The Richland county history, issued in 1880, and those of the counties of Licking, Knox, Ashland, Delaware, Washington and Coshocton, all published within two years, contain each an elaborate chapter, giving detailed descriptions of the works of the mound builders therein. And incidently it may be observed, by way of congratulation, that in the department of correspondence of the "American Antiquarian" is found evidence of increased interest in the investigation of these mounds.

Of the books on American archæology, published within a few years, I make mention of that of Hon. A. J. Conant, of St. Louis, entitled "Footprints of vanished races in the Mississippi Valley;" also of Rev. J. P. MacLean's "Mound Builders," both interesting and instructive works. And lastly I name the larger, more exhaustive and highly creditable work, written by the able and scholarly corrosponding secretary of the Archæological Association, (Professor J. T. Short, of the Ohio University), entitled "The North Americans of Antiquity," And it might be added that evidence or increased interest in western antiquities is found in the demand for the numerous lectures that have been of late years delivered in Ohio and the west, on that subject, notably by Miss Fletcher, Judge Cox, and many others.

I must not omit to refer to the great activity of many of the local asociations in our own and other western states, devoted in part or wholly to archæology.

Of these local societies I will mention the following: "The Western Reserve Historical Society at Cleveland," "The Natural History Society at Cincinnati," and the "Archæological Society at Madisonville." These have been the most active. The former two having large collections of archæological relics. The Madisonville society is noted for having explored so thoroughly an ancient cemetery near that village and having made the interesting discoveries of graves, ash-pits and other peculiarities of aboriginal burying places. The collection of relics, including a large number of bone implements and of novel cut-bones may now be found in the cabinet in the Natural History Society at Cincinnati. Several other local societies have, within a few years, accomplished important work. The State Archæological Society, established by yourself, was instrumental in gathering the largest collection and making the greatest disolay of archæological relics at the Centennial Exhibition, and afterward publishing a monogram on the subject. The district historical society of Summit, Ashland and Medina counties, was at one time quite active and gathered a large museum which is still in existence at Akron under the charge of the Academy of Science at that city. A society having its headquarters at Urbana, and having for its president the Prof. T. F. Moses, was instrumental in securing the survey and discription of nearly all the mounds and earth-works in Champaign county. A valuable report of these works was published in the year 1876. It is a matter of congratulation also that the colleges in this state have taken so much interest in archæology. There are valuable collections in the colleges at Wooster, at Delaware, Earlham College at Richmond, Ind., at Aliance and at Urbana. Perhaps no state in the union has more private collections in archæology than Ohio has. These collections are so situated that nearly every part of the state has a cabinet representing the relics of the locality. Some of them are very valuable. Among these we would mention the cabinets of Thomas Cleaney, Dr. H. H. Hill, Dr. S. C. Heighway at Cincinnati, that of Dr. Welsh at Wilmington, Rev. J. K. McLean at Hamilton, Wm. F. Taylor at Findlay, S. H. Binkley at Alexanderville.

It is to be regretted that the State Archæological Society did not continue, so as to gather these private cabinets into one museum at the capital and to publish a catalogue of them and ultimately to secure a complete survey of the many interesting works in the state and publish any account of them. We hope, however, that the *Antiquarian* may continue, and that reports of discoveries and explorations in this state as well as in others will appear, and so a permanent record of the monuments and

relics be made. The value of a first class journal which shall go into all the libraries of the world, may not at present be appreciated, but time will show that the work which you are now doing is as important as anything can be. This contribution to your department of correspondence is made with the hope that that department will become the most valuable feature of your already valuable magazine.

Respectfully yours, ISAAC SMUCKER.

NEWARK, OHIO.

DISCOVERIES AT JERUSALEM.

A letter from our Associate Editor, Rev. Selah Merrill, U. S. Consul.

A ruin of considerable interest and one that has attracted some attention, has recently been brought to light a few hundred yards north of the Damascus Gate. The main road to Nablous passes here through a large grove of olive trees, and just beyond these, on the right hand side of the road, the owner of a piece of ground failed year after year to produce grain or vegetables owing to the unnatural dryness of the soil. Even irrigation did little or no good, and in some places holes appeared in the ground which could not be accounted for. At last the owner determined to dig and see what was below the surface of his field. To his surprise he very soon came upon fine walls and a pavement, and, to come at once to the end of the story, after a number of months spent in excavations, a beautiful church, with some important surrounding buildings, was laid bare.

The amount of debris which had accumulated above the floor of these buildings was from ten to twenty feet in depth. Before the digging commenced there was nothing in the appearance of this spot to distinguish it from the common field about it, except that at this point the ground was slightly elevated and uneven. To remove this mass of earth has required a long time, and the work is by no means yet accomplished. The piece of ground in question has about sixty yards frontage on the main road, and extends, so far as the excavations go, about the same distance back from the road.

The church which has been uncovered is situated on the south side of this plot and is very near the street. For several yards in front of the church the ground was paved with fine slabs. The steps by which the church was entered were five feet wide, although the doorway was somewhat wider. From the entrance to the altar step the distance is fifty-five feet, and from that point to the back of the apse the distance is fifteen feet and six inches. The width of the apse is sixteen feet and six inches. The width of the church is twenty-four feet and six inches. Nine feet in

front of the altar step a wall has been thrown across the church in a similar way to that in the church of the nativity at Bethlehem. This wall, also those of the church itself of which several courses remain, and the interior of the apse show that the building was originally painted, and some of the figures and designs can still be traced.

At the southeast corner of the church, leading from the end of the apse, there is a narrow but well built passage way to the buildings in the rear. These buildings are not so clearly defined, but it is certain that they did not stand on a line with the church, but at an angle of twenty-five degrees with that line. Between the church and what I call the main building in the rear, there was a passage way not over three feet wide. This main building was forty-seven feet and six inches long, but to this there must be added twenty feet more of a special room which seems to have belonged to it and had a beautiful Mosaic pavement.

Thus the extreme length from the front of the church to the east side of this Mosaic floor was one hundred and forty feet.

On the west side of this Mosaic floor where it joins the wall of the main building, there is a threshold of a single stone nine feet six inches in length, with a step six feet and nine inches in the clear. This is much larger, it will be noticed, than the entrance to the church, which is only five feet in the clear. Here and there are patches of Mosaic, but in one place several feet square of it have been preserved, enough to show that the work was extremely beautiful. On one side are the large Greek letters: *ο ο ε γ*

North of this Mosaic floor and of the main building which joins it, and running alongside of both, there is a water course or a channel cut in the solid rock, which has been levelled to accommodate the buildings above. This can be traced in an east and west line for a distance of thirty-seven feet. It is two feet and three inches deep, twenty inches wide at the top and twelve at the bottom. From about the middle of the Mosaic floor this channel turns a right angle and runs twenty feet or more (so far as I could trace it) to the north. It is possible that it led *from* the north and at the point indicated turned a right angle to the west. Piles of stones and debris prevent us, at present, from deciding where the channel came from.

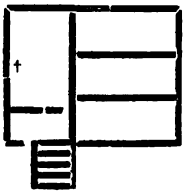
In the bank of debris which rises on the east side of the Mosaic floor to a height of twenty feet there is, about six feet above the floor, a water course, formed of cement, running north and south, at right angles to the line of the church and other buildings, which must have belonged to a much later period. In fact the Mosaic floor appears to extend under and beyond this canal.

In the northwest corner of the room where the Mosaic floor is

found, very near the angle (already mentioned) of the rock cut channel, there is a tomb about six feet below the surface. The tomb is ten feet long and nine feet wide, and is entered by a narrow doorway, which is well built, and in the sides of which are grooves for a door to slide up and down. On the wall of the tomb, at the east end, there is a raised Greek cross, twenty-two inches long and thirteen inches wide. In the lower left-hand angle of the cross are the letters (each five inches in length) $\overline{\text{KXIO}}$.
Y

It is possible that XIO should be $\overline{\text{XIII}}$. The character below looks like a Hebrew letter.

The following is a plan of the tomb:



One cannot stand erect in the highest part, but it is to be considered that the loculi are two-thirds full of debris, which is composed mostly of decayed bones with small bits of glass mingled with it. Up to the present time those who have charge of the excavations have not allowed these tombs to be cleared out.

To the north of the church and facing the street, there are four large houses each seventy-five feet long and twenty-eight feet wide. One or more of them appear to have been divided by arches into smaller apartments. The lower courses of the walls are of squared stones while the upper portions are of rubble work. This was covered with a heavy coating of plaster.

Among the ruins there are two sections of marble columns each thirty-three inches in diameter. There is no evidence to show that these belonged to the original buildings.

Three large cisterns have been found, two of which were nearly full of water. As the mouths of these, which were closed, were nearly ten feet below the surface of the ground (i. e. the debris above), it may be that the water in them is centuries old.

In the church two pieces of cornice were found each eight feet in length. One is entire and is quite plain, while the other, which is broken in the middle, has the figures of Christ and his twelve disciples painted upon it, Christ, the central figure, being larger than the rest. When found these paintings were well preserved, but exposure since has nearly obliterated them, although they can still be distinctly traced.

I omitted to say in the proper place that the floor of the church is finely paved with large slabs, some of which are four feet long and others six feet long by two and a half wide.

One of the slabs with which the court in front of the church is paved, contains an inscription in well cut Greek letters. This

† Cross at this point.

slab lies about in the center of this paved area. Is it entire? Is it in its original position? One asks these questions because it is difficult to read the inscription, which is due partly to the fact, perhaps, that at some later period other letters have been scratched or cut over the old ones in the most bungling manner, making the inscription as it stands at present quite a puzzle.

φερου
HC△I△
ορCC
OOT△
OC

The above appear to be the original letters. Those of a later date are not represented. The inscription seems to be complete towards the right; hence it is possible that to the left this block may have joined another stone on which the missing portions (if any) of the inscription existed.

Near this point it is said that a tomb was found at the beginning of the excavations, but there are no signs of it at present, nor do the workmen or those now in charge know anything of such a tomb.

Broken pottery and glass have been found and some small articles in marble of no great value. The top of a certain block of marble has been formed into a basin and a hole drilled the entire length of the block to allow the water to run off.

I have already hinted that the ruins extend under ground some distance to the mosaic floor, and efforts are being made to purchase the land in that direction, in order to allow of the excavations being extended there. It is almost equally certain that the buildings extended to the south and southeast of the present plot of ground. But the owners of the land are jealous and everybody is suspicious, consequently excavations must be abandoned or move with aggravating slowness.

South of the mosaic floor and of the east end of the main building there is a large underground chamber with six openings (each the size of a man's body), to the surface. The chamber is twelve feet wide and nearly twenty feet long, but the depth is not yet ascertained owing to the accumulations of debris. On the west and north sides a wall of solid rock appears to a depth of six feet, showing that the chamber was excavated in part at least in the rock. The use of this chamber does not appear evident, unless it may have been a store room. The place within the city shown as Peter's Prison has a similar chamber with similar openings in the ceiling or roof.

It has been suggested that this church belongs to the time of the Crusaders, but there is good evidence for believing that it dates from a period many centuries previous to that event, in

addition to the current tradition that this is the church of St. Stephen. The Grotto of Jeremiah is not far distant to the south-east, above which the most prominent scholars now agree in locating the site of the crucifixion. The place of the burial of our Lord is far more likely to have been here at the very foot of Calvary than beneath the present church of the Holy Sepulchre, within the walls. At the same time I do not claim that the tomb now described has any connection with that event, for it is not a Jewish tomb, but of Christian origin.

Without discussing this point the finding of this group of ruins suggests the question; what is beneath the soil in and around Jerusalem? Here was a common field in the midst of an olive grove, where the trees are of great age, and no one would be likely to suspect that eight, ten, or twenty feet below the surface important ruins were buried. If Jerusalem could be bought by some wealthy person, the inhabitants moved to the sea coast, and the city given up to the Archæologists — !!!

UNEARTHING OF AN ANCIENT STABLE.

About one hundred and fifty yards south of this church, in a field lying directly west of the hill in which is the grotto of Jeremiah, there has been discovered a number of large rooms at a depth of six or eight feet below the surface of the ground. One of the largest of these rooms was used as a stable, and the mangers sufficient in number to accommodate fifty or more animals, are still intact and could be used again without first being repaired. These are all built of stone and have holes drilled at the proper points where the animals were tied. It is curious that a long manger alternates with a short one throughout the entire length of the stable.

The indications are that all this section of the present suburbs of the city has been covered with houses and other buildings which have long since been buried deep beneath the soil. Indeed it can be shown that in Josephus' time there were here many gardens and hedges which the Romans had to clear away before they could approach the city walls.

A MONUMENT FROM THE TIME OF HEROD OR OF KING SOLOMON.

In the grounds of the "Russian Buildings" which are situated northwest of the city just outside of the walls, there was found a few years since a very interesting monument of the time of Herod, or it may be of the time of King Solomon. It is a column a little over forty feet long and slightly less than six feet in diameter. It lies in the quarry where the ancient workmen were cutting and shaping it for service in the Temple. The surface of the ground was level or just like any other portion of the common field. By mere accident men began to dig at

that point and soon came upon a column which, when the earth was entirely removed, proved to be one of great size and beauty. According to the ancient custom the column was being shaped as it was cut from the original mass of rock to which it belonged, and in this case the rounding extended under one side while on the other it did not extend so low and quite at the bottom (on that side) the column remained attached to the native rock. There are at present several cracks in the column, and it is probable that some flaw was discovered in it after it was nearly ready to be moved, and that it was abandoned on that account.

So far as I know columns of this size were not used in any buildings in Jerusalem outside of the Temple, but they were used in the Temple itself. Under the Mosque el Aksa at the point known as the Double Gate, where is some of the oldest work yet in existence which once belonged to the Temple, there are columns (monoliths) similar to the one now described as lying in the ancient quarry. There is every reason to believe that this one was designed to be a companion to those.

The Russians are to be commended for preserving with great care whatever relics of antiquity they happen to find in and about the holy city, and in the present case they have removed the earth from around the column, built on each side of the excavation, a sloping faced wall to prevent the earth and debris from settling again about it, and surrounded the excavation on the surface of the ground with a substantial iron fence, so that visitors can come near to the column but cannot touch it. A suitable tablet on the inside of the fence commemorates the finding of the column and gives the date which was in 1871.

ANCIENT COINS IN PALESTINE.

With regard to ancient coins pertaining to Palestine it has been difficult to obtain good ones in any considerable number. There are many coin collectors among the natives, particularly among the Jews, and the different values of coins are pretty well known, so that it is by mere good luck that one gets hold of a valuable coin at a nominal or even a moderate price.

Southeast of the Harem area the bank of Ophel, which slopes on the east very abruptly to the Kedron valley, is composed to a large extent of debris that has accumulated through many centuries. Here are great beds of broken pottery which the peasants excavate for the sole purpose of saving the pottery itself. It is first separated into different grades as coarse, fine, finest, etc., and afterwards roughly pulverized by means of heavy rollers. It is used in making cement for cisterns and other places where great hardness and durability are required. Sometimes nice pieces of ancient pottery are brought to light entire, and likewise beautiful specimens of irridescent glass. Alabaster

vases and bronze trinkets are occasionally found and many coins, the latter being in general mere lumps of rust and of no value.

As great quantities of this debris are carried away by the torrents which, at certain times during the rainy season, pour down the Kedron valley, the coins which the debris contains naturally settle to the bottom and lodge in little holes and crevices behind the large rocks in the bed of the stream. After the rains men and boys search behind such rocks and are frequently rewarded by finding handfuls of old coins. Were any number of these good coins instead of being mere lumps of rust, the finders would make a lucrative business.

I have on several occasions bought a small handful of such coins and attempted to clean them. Now and then I have been reward by finding a good coin belonging to the time of the Jewish war, under Titus and Vespasian, to one of the Procurators of Judea during the life of Christ, or to the Hebrew people preceding by one hundred or one hundred and fifty years the birth of our Lord. Once I paid about ten cents for a dozen or twenty lumps of green rust, one of which was much larger than the rest, and which, on being cleaned, proved to be a valuable coin of the third year of Herod the Great. Obtaining this coin was due to no shrewdness on my part but was simply a piece of good luck.

Even in those instances where coins have been found preserved in earthen jars, water has generally had access to them so that they are nearly or quite ruined and prove to be of very little value.

The destruction of important monuments goes on to-day just as it has done for the past eighteen hundred years. Beautiful and costly objects of various kinds, columns, capitals, cornices and richly carved blocks of marble have, during all these centuries, been converted into lime by the people of the country, as though they were of no more value than the common stones that might be dug anywhere from the earth. Only a few days since I saw a section of a column that was six feet long and eighteen inches in diameter, which was found in the shop of a marble worker. This man had first cut the column lengthways into quarters, which is frequently done with a large sawmill log in our country, and three of the quarters he had sawed into slabs for use in modern houses, but the fourth was fortunately purchased and is now securely preserved,—at once a monument of modern vandalism and of ancient art. The original length of the column cannot now be determined, but the part which is preserved contains a few words of a Greek inscription which was finely engraved and which extended to eight or ten lines. The inscription commemorates some event during the reign of Antoninus.

SELAH MERRILL.

JERUSALEM, Nov., 1883.

EDITORIAL.

THE TABLET OF THE CROSS AT PALENQUE.

One of the most curious antiquities of America is that which is called the "Tablet of the Cross." This tablet was found in the temple at Palenque, in Yucatan. The history of its discovery is an interesting one. This has been recently given by Dr. Charles Rau, in a monograph published by the Smithsonian. A brief resume of this may be of interest.*

The temple in which the tablet was found is situated at Palenque. The ruins at this place were first discovered by the Spaniards in 1746, but were explored by Capt. Antonio del Rio in 1787. His account, translated into English, was published in 1820, by Henry Berthoud. William Du Paix, accompanied by Sr. Castineda as a draughtsman, examined the ruins in 1807. Castineda's drawings were the first which were ever made. They were used by Waldeck and again by Lord Kingsborough in his great work on Mexican antiquities, published in 1830. In 1832, Waldeck, then 66 years old, visited Palenque and surveyed the ruins for himself. His report and drawings were published by Brasseur de Bourbourg in 1866. Waldeck's drawings, however, were not correct. The anatomical proportions of the human figures were much better than the sculptures warrant. Stephens visited the ruins in 1840. In 1857 Stephen's account was published and has proved to be a very correct one. Charnay took photographs which were published at Paris in 1863. He visited the ruins a second time and took a cast of the tablet, a copy of which was sent to Washington, and is now in the National Museum. A description of the tablet has been given by all of these authors. The temple which contained it was situated on a pyramid which was 134 feet high on the slope. The pyramid itself was on a broken stone terrace sixty feet high with a level esplanade around its base, 160 feet in breadth.

The dimensions of the temple are as follows: fifty-one feet front, thirty-one feet deep, height about forty feet. This would make the total height of the pyramid, terrace and temple, two hundred and thirty-four feet. The temple had three entrances at the front, and was covered with stucco ornaments. The piers between the entrances contained hieroglyphics and figures in bas-relief. The interior was divided into three parts: an outer corridor, an inner corridor, which might be called the sanctuary, and a chamber called the adoratorio, at the rear of the sanctuary. There was a door or opening from the outer cor-

*See Smithsonian contributions to knowledge, 331.

ridor to the inner, and another door or opening into the chamber. These three doors, that in the front, that between the corridors, and that into the chamber or adoratorio were all in a line, and so arranged that the light from the outside could penetrate into the adoratorio and strike the tablet. The tablet was upon the wall back of the chamber or adoratorio, and covered nearly the entire wall. Stephens gives the dimensions of the room containing the tablet as follows: Thirteen feet in length, seven feet in depth, and represents the tablet as covering the rear wall. Galindo states "it was covered with a flat roof." Charnay says that "this altar, which recalls by its form the ark of the Hebrews, is a sort of covered box, having for an ornament a small frieze or moulding. High above both extremities of this frieze are two wings, reminding one of the same kind of ornamentations often seen in connection with Egyptian monuments." It is a question whether Charnay did not confound the wing ornament on the temple of the sun with what he saw on the temple of the cross, and attribute them to this frieze, as no one else has described the wing ornament to the temple of the cross. He says in reference to the tablet: "In the background of the altar are seen three immense slabs, close by, joined and covered by precious sculptures." According to all accounts, we judge that the tablet itself was six feet, four inches high, and thirteen feet long, as it covers the entire wall of the adoratorio.

Del Rio says that there was a subterranean depository coinciding with the center of the oratory, and in each of the inner angles, near the entrance, a cavity where two little jars were buried. In the central depository cavity he found two earthen vessels, one foot in diameter, and beneath this a circular stone, covering a cavity one foot wide, one-third foot deep, containing a flint lance, two small pyramids with a figure of a heart, two small earthen jars containing small stones, and a ball of vermillion.

The tablet, according to Stephens, was composed of three different slabs; those on the right and left, having hieroglyphics inscribed upon them, but the middle slab having upon it the cross and other figures. A history of the slabs in their separate capacities should be given. It appears that the middle slab containing the cross and the right slab containing hieroglyphics, have been removed. Dr. Rau has been careful to trace the history of the right slab, but we have been able to pick up one link for the middle slab which will be of interest to our readers and possibly may be appreciated by the Smithsonian. Captain Wm. Brown, a native of Framingham, Mass., commanded a vessel which plied between New York and Mexico about the year 1820. He married a Spanish lady who owned a ranche on the Tobasco river, consisting of about 40,000 acres, but who had a town house not far from Palenque.

Captain Brown is the person who took down the middle slab and who attempted to carry it away. It was with the idea of adorning his own residence that he removed the tablet. He hired a large number of men, slid the tablet down the pyramid, and arranged to transport it. The manner of carrying it was as follows: He placed a large number of green poles under the tablet and upon the shoulders of the men. The men carried the tablet a distance toward the town house, our informant says, about half way, but an order came from the priests that the tablet should not be removed, and the natives dropped it where they were, and there the tablet was left. Our informant is the Rev. Wm. Brown, of Janesville, Wis., a nephew of Capt. Brown. We have traced the published history and have found that this occurred between the visit by Dupaix in 1808 and that by Waldeck in 1832. Dupaix describes the tablet as complete, all three slabs being in their place. Waldeck speaks of the middle tablet. His words are: "This is the portion of the beautiful work which I have saved from a voyage to the United States whither it was to be transferred. Not without much labor this heavy stone has been transported to the river which flows through the ruins and there I confiscated it by order of the governor of Chiapas; there I also drew it. Ten years later Stephens and Catherwood found it in the same place. In 1832 there remained only the stones forming the left and right sides of the relief, and in 1842 Stephens found only that constituting the left side."

This middle slab, Stephens propped up and Cartherwood drew it. Charnay took a photograph of the middle slab, but owing to difficulties did not succeed in getting it perfect. The sculptures had been considerably injured by long exposure. It seems that this important specimen of primitive sculpture is likely to be destroyed or to perish from neglect. The left slab is in the temple at the present time. The right slab is in the National Museum. The middle slab is, we suppose, by the side of the river where Capt. Brown left it. Stephens found it covered with mud, and spent much time in cleaning it. Charnay says of this tablet: "Torn from its original place by a fanatic, who saw in it a reproduction of the Christian emblem miraculously employed by the ancient inhabitants of these palaces, it was designed to ornament the house of a rich widow in the village of Palenque; but the authorities were aroused by this devastation and prohibited the removal of the stone; it was consequently left in the woods where I unconsciously trod on it until my guide directed my attention to this precious stone. It was covered with moss and the sculptures had become totally invisible. When I afterwards concluded to reproduce it, it had to be rubbed with brushes and set against a tree."

The history of the removal of the right slab of the tablet is given by Dr. Rau. Mr. Charles Russell, a native of Philadel-

phia, was United States consul at Laguna, in Champeche, from from 1839 to 1843. He entertained Stephens and Catherwood at the time of their visit at Laguna, in 1840.

It is supposed that he caught some of their enthusiasm, for in 1842 he forwarded to the National Institute for promotion of science in two boxes sent in separate vessels "the fragments of a tablet in the ruins at Palenque" and "other pieces of the same tablet which made it complete." These fragments excited some interest at the time. The fragments were placed in the patent office. Mr. T. R. Peale, who had charge of them, states that they fitted exactly together. Mr. Clark Mills, the sculptor, in 1848 made a plaster cast of them, and sent them to the Royal Museum at Berlin. In 1863 Dr. George A. Matile made a new cast; he recognized the fragments as one of the three stone slabs, which placed together, bore on their surface the sculpture of the famous group of the cross. This part of the tablet is in the Smithsonian building. In 1873 a photograph of it was sent to Dr. P. J. J. Valentini, and was pronounced by him to be the missing slab of the temple of the cross.

The middle slab is the one which interests us. It is represented in our frontispiece.

Stephens describes the tablet as follows: The principle subject is the cross. It is surmounted by a strange bird. The two figures are evidently important personages. They are well drawn, and in symmetry of proportion are perhaps equal to many that are carved on the ruined wall of Egypt in a style different from any heretofore given, and the folds would seem to indicate that they were of a soft and pliable texture like cotton. Both are looking toward the cross, and one seems in the act of making an offering, perhaps of a child. All speculations on the subject are of course entitled to little regard, but perhaps it would not be wrong to ascribe to these personages a sacerdotal character. This tablet of the cross has given rise to more learned speculations than any others found at Palenque. Dupaix and his commentators assuming for the building a very remote antiquity, antecedent to the Christian era, account for the appearance of the cross by the argument that it was known and had a symbolical meaning long before it was established as the emblem of the Christian faith. 'There is no doubt that the symbol of the cross is contained upon the tablet. The symbol in this case has a complicated character. There are the features of the cross, namely, the upright pieces and the cross pieces or arms, but the arms terminate with figures, which resemble maces, or badge or battle-axes, such as are used among the native races. The center of the standard has the figure of a winged arrow. The top of the standard is ornamented by various expressive symbols, somewhat resembling the horns on the Assyrian columns, and on the top stands the thunder bird. The

bird is ornamented with tassels and pendents and symbols of various kinds. The base of the cross also has various ornaments, which we will not undertake to explain. The whole cross rests on a masked face, which somewhat resembles the human countenance, but is distinguished by a peculiar mouth and eye, the eye somewhat resembling that in the rain-god, a figure which may be seen on the temple of the sun, at Palenque, which has been described. Pendant from the arms of the cross are ornaments which reach to the floor on either side, containing various symbols, and among them heads with protruding tongues, and various symbolic figures emenating from their eyes. There is also on the ornamentations of the standing figure at the left another cross, and among, the hieroglyphics at either side the Greek-tau can be recognized.

That the cross existed in Americn in prehistoric times may be shown from various monuments besides this tablet at Palenque. Perhaps no other specimen is so complete and striking as this one, yet there are many other cases where the symbol has been recognized. Our readers will have noticed in the figure given as a frontispiece to Volume V, Number 1, the shape of the cross. This idol there represented was called the goddess of death. The idol was covered with serpent tails, the claws of beasts and human heads, but the shape of the idol was that of the cross. The cross of Teotihuacan is another specimen. This has been referred to by various persons. The Revue de Ethnographie has a cut of it. This is a simple square monument built in the form of a cross with two projections resembling arms on the side of the monument. The same general shape is shown in it that is presented by the goddess of death, and the same serpent symbols may be seen in it. The monument is very plain, having no ornamentation, but in the front there are three serpent tails. Another figure which has the shape of a cross is given in the work by Stephens. It is one of two stone statues perfectly alike which were discovered by Waldeck, on the southern slope of the pryamid which sustains the temple of the cross, and thought by him to have served for supporting a platform before the middle door of the temple. This platform, he states, was twenty feet long and ten feet wide. Stephens saw one of these statues and a cut of it is seen in his work. He says we were at once struck with the expression of serene repose and its strong resemblence to Egyptian statues, though in size it does not compare with the gigantic remains of Egypt. In height it is ten feet six inches, of which two feet six inches were under ground. The head dress is lofty and spreading; there are holes in the place of ears which were perhaps adorned with earings of gold and pearl. Round the neck is a necklace, and pressed against the breast by the right hand is an instrument

apparently with teeth. The left hand rests on a hieroglyphic, from which descend some symbolic ornaments. The lower part of the dress bears an unfortunate resemblance to the modern pantaloons, but the figure stands on what we have always considered a hieroglyphic, analogous again to the custom in Egypt, of recording the name and office of the hero and other person represented. The sides are rounded and the back is of rough stone. Probably it stood embedded in a wall.

The significance of the cross is a point which deserves our attention. This has been discussed by various authors, but the most plausible explanation is that given by Dr. D. G. Brinton, namely: It was a weather symbol denoting the points of the compass, but was here connected with the rain gods by virtue of its symbolic significance. There are many arguments for this view, and we are not inclined to deny but that primarily the cross was thus used. We would, however, call attention to the fact that sacrifices were offered before this cross and that the sacrifice is significant as well as the symbol. This association of sacrifices with the cross is a surprising circumstance. We do not claim that it is any evidence of the historic origin of the cross or that the sacrifices had any connection with the Jewish or Christian idea of sacrifice, but we refer to the fact as very significant. It is possible that sacrifices had a prehistoric origin as well as the cross, and that both were peculiarities of nature worship before they were incorporated by the Jews and before the cross became a Christian symbol. It seems hardly probable that the advanced symbolism of the cross and the Christian idea of sacrifice had deteriorated, and with this deterioration had been introduced into America, but it is more probable that we have here that which preceded the historic custom and symbol. The development having been parallel in America with something which presumably existed in Asia, but which has been lost in the passage of time. Everything in America is in that arrested state which reveals the prehistoric without the addition of the historic symbolism, while in Asia the prehistoric has been buried under the accumulation of the historic. The cross in America was undoubtedly a symbol around which clustered human sacrifices. We see this from the picture of the tablet. The divinity is the thunder bird. The cross is a support for this divinity. A priest is offering a sacrifice to the thunder bird. The sacrifice offered is that of a child which is held up to the bird in the hands of the priest. This was a custom practiced by the Mayas.

Landa says, on the occasion of a calamity or of a public necessity, the priest sometimes gave orders to command human sacrifices, to which all contributed some by furnishing the means for buying slaves, others by giving up their little children, thus showing their devotion. Dr. Rau thinks that the Palenque Cross is a monument commemorative of a propitiatory sacrifice

to the rain-god, made perhaps during a period of great suffering, arising from want of water. We question this somewhat, as the temple was evidently a place of stated worship, and not an accidental shrine. Mr. H. H. Bancroft and Mr. E. G. Squier make the serpent symbol and the cross representatives of worship of the reciprocals of nature. Mr. Bancroft says "the frequent occurrence of the cross which has served in so many and such widely separated parts of the earth as the symbol of the life-giving, creative and fertilative principle in nature is perhaps one of the most striking evidences of the former recognition of the reciprocal principles of nature by the Americans." Dr. J. G. Miller says: "The cross is met as a nature symbol among the ancient nations of the world; a fact which in view of its simple shape, can hardly cause any surprise. It was employed as such by the Hindoos, Egyptians, Syrians and Phœnicians, and it decorated the head of the Ephesian goddess. But it is just the simpleness of its form that renders an interpretation difficult, because it admits of too many possibilities. All attempts thus far made to interpret it as a Nile-Key phallus or sign of the season, unite in the conception of the fructifying energy of nature. Hence it appears in connection with sun-gods and the Ephesian goddess, and it is also the fitting symbol of the rain-god of tropical lands, whom it represents, as stated by the natives. In China, too, the rain signifies concepcion, and the Greek myth of the golden rain, which the cloud-gathering Jupiter showers upon Diana, has no other sense. Wherever mention is made of a veneration of the cross in Central America, it appears less hazardous to connect its worship with the fertilizing rain-god crossing the receiving maternal earth."

We would call attention to the symbolism on the tablet. If the reciprocal principle was known to the worshippers of the rain-god, the symbol itself is excluded from the tablet, and the cross becomes a purely elemental emblem. Possibly there was a transition from the worship of the lower principle to the higher and elemental power. The tablet is at least suggestive as to the religious conceptions which formerly prevailed in America. There is no doubt that the cross was a symbol in the native religions which existed, but a symbol purely elemental and not phallic.

The sacrifices connected with it were evidently sacrifices to some nature divinity. Whatever the origin of the symbol was, this seems plain. It is not at all certain that the cross or the sacrifice here found is to be at all associated with the sacrifices and symbols of the Christian religion. They are certainly very remote and the conceptions are very far apart, for nothing can be higher, or purer, or better than the Christian conception of the divinity, and nothing much lower than this

heathen conception. We put the two in contrast and leave it for others to trace the historic connection if there is any.

EDITORIAL NOTES.

A GREEK RIP VAN WINKLE — It is suggested by a writer that "Rip van Winkle" had its origin in a Greek fable, given by Diogenes Laertius in his life of the ancient philosopher, Epimenides:

"Once, when Epimenides was sent by his father into the fields, to look for a sheep, he turned out of the road at mid-day, and lay down in a certain cave, and fell asleep; and there slept for fifty-seven years. After that, when he awoke, he went on looking for the sheep, thinking than he had only taken a short nap. But as he could not find it, he went on to the field. There he found everything changed, and the estate in another person's possession. So he came back again to the city in great perplexity; and as he was going into his own house, he met some people who asked him who he was; and at last he found his younger brother, who had now become an old man, and from him he learned all the truth.

PERSONAL.

Mr. Joseph T. Clark has delivered lectures on Assos and Classic Archæology in John's Hopkins University.

Dr. Paul Haupt, professor of Assyriology at Gottingen, is now teaching Hebrew, Arabic, Ethiopic, Assyrian and Accado-Sumerian at John's Hopkins University.

Rev. A. H. Sayce, D. D., F. R. S., has delivered a lecture at Bath, England, on "What the Assyrian Inscriptions tell us about the Old Testament."

Prof. Boyd Dawkins has an article in the *North American Review* on the Antiquity of Man in America.

Mr. G. L. Gomme, F. S. A., has published a book on Folk-Lore, Relics of Early Village Life.

The same author has been writing an article in the *Antiquary* on Primitive Agricultural Implements.

Mr. Frederick Seebohn has a book on the English Village Community, which is reviewed in the November of the *Antiquary*.

Rev. Prof. J. T. Short, the author of "North Americans of Antiquity," died at his residence at Columbus, Ohio, after lingering with consumption for nearly a year.

Dr. D. G. Brinton has been made vice-president of the congres de American is tes.

Baron Nordenskjold discovered in Iceland an ancient chart supposed to be Zeno's chart of 1558.

We give with this number two letters from esteemed contributors whose hands now lie still in death, Rev. S. R. Riggs and E. G. Barney. The former is well known as a devoted missionary, and the author of the Dakotan Dictionary. The latter was a gentlemen of wealth, who sought restorative health by taking

a contract for building bridges in the United States of Colombia, but who developed remarkable skill in observing and writing up the archæological tokens of that country. We give Mr. Rigg's letter as it indicates his scholarly attainments, and shall continue to publish Mr. Barney's articles until they are finished. We regret that the book which he was preparing, engravings for which he had engaged, and which was first to be published in this magazine, cannot now be finished.

HUMAN BONES IN THE QUARTERNARY.

A RECENT bulletin of the Anthropological Society, of Paris, contains a paper read at a meeting of the Society, on the third of last May, by Mr. Aug. Nicaise, giving an account of the discovery of human bones, associated with the quarternary fauna and worked flints, in the quarternary gravels of the valley of the Marne, near Chalons. This is a most important discovery, as hitherto human bones that can be indisputably referred to the drift period have been very few in number, and the localities in which they have occurred have been restricted to the valleys of the Rhine, the Somme and the Seine. The gravel-pit, in which the human remains were found, is situated about two hundred and ninety feet above the level of the sea, and thirty-six feet above that of the Nori Marne. The bones themselves were buried from nineteen to twenty-three feet deep in the gravel, of which a cut gives full details, and they consist of a lower jaw and a thigh bone, both belonging to quite a young individual. The same gravel-pit yielded at similar depths bones of such well known quarternary fauna as the *Elephas Primigenius*, *Bos Primigenius*, *Rhinoceros Tichorinos;* and some six feet deeper there were found three fine flint flakes one of which was more than five inches in length. Worked flint flakes are rare in quarternary deposits; the celebrated locality for example, of St. Acheul, near Amiens, in the Somme valley, from which have come several hundred of the characteristic large, roughly chipped "axes of the St. Acheul type," has only yielded a very small proportion of flakes. H. W. H.

RECENT DISCOVERIES.

A CAVE has been discovered in North Wales with two separate Stalagmite floors; between the floors were the bones of the mammoth rhinoceros etc.

THE SUASTIKA IN ENGLAND. Roman remains have been found at Wiveliscombe, G. B., with tesslated Mosaic pavements. A Buddhist Cross, called Suastika was found also among the remains. This symbol it is said, has been found in many Roman buildings. It has also been found cut in stone in the north of Scotland, and incised upon bronze implements and weapons of early ages. It consists of two crosses with arms of equal length, and additional pieces extending from the end of each arm at right angles. It is called by some a fire generator, by others the wheel which is a symbol of the sun wheeling along the heavens. It is an eastern sign which dates as early as 1200 years B. C.

THE TEMPLE OF THE DOUBLE AXE BLADE. A curious discovery has been made by Prof. J. H. Hall, of Philadelphia. The temple of the Zeus Labranius in Cyprus, he maintains was named from Zeus of the ax or Zeus Labrys. Fellowes has identified an ancient temple of Zeus Labronda at Mylasa. The double bladed ax is the prominent symbol of this temple. This emblem is seen on four different Key stones, built into various walls in the town, showing that it was probably placed over each of the gates. The coin of Mylasa had, on the obverse, an image of Jupiter holding the double ax in one hand, and a spear in the other. Prof. Hall thinks that the Zeus Labranius in Cyprus, whose inscription has been found on several fragments of statues, was a local divinity which belonged to the Lycian settlers and that these came from Mylasa. The temple was discovered by Cesnola.

Near Fasula fragments of two statues having the eagle of Jupiter and Greek inscriptions were found near the temple. The statues were offerings to the Deity. The Deity though a local one was very ancient. The ax was not found by Cesnola but the symbol was peculiar to the Zeus, to whom the temple was dedicated. The discovery by Fellowes of this symbol, is very interesting as it takes the worship of Zeus back to prehistoric times, the ax and spear, being emblems which belong to a primitive culture, and one which may be said to have come from prehistoric times.

DISCOVERIES IN PORTUGAL. Mr. Carlos Robeiro has published a book on the various discoveries of polished stone relics and other tokens near Lisbon. Remains of walls, enclosing areas where were entrenched camps, were also discovered. In these enclosures relics were exhumed, such as celts, hammer stones, knives, scrapers, arrow-heads, lances, rude clay vases, and bone implements, bones of horses, oxen, stags, goats.

PILGRIM FATHERS. The discovery of a large number of human bones at Plymouth, Mass., brings up the record of the early sufferings and mortality among the Pilgrims. In 1735 a freshet exposed several bodies. In 1809, a body was exposed in connection with building a house. In 1855 workmen laying water pipes disinterred four skeletons. Black soil one and one-half feet below the surface, indicated that the land over the graves was cultivated as history records. This year in October and November, other bodies have been disinterred by parties who were changing the stone posts on the hillside. These bodies have been buried again on the spot where they lay.

SOPHOCLES. The death of this author of the Greek Grammar, will have been noticed by our readers. Sophocles was a native of Thessaliy, but came to this country about forty years ago, and became professor of Greek, first at Yale and afterward at Harvard. He has lived in his own room for twenty-five or thirty years teaching Greek, but has not published any thing of so much importance as the Grammar which bears his name.

ANCIENT VILLAGES IN GERMANY. Mr. Denman W. Ross, has published a book on land-holding in Germany. He believed that the communistic system did not prevail in the time of Caesar and Tacitus. He takes the singular position that isolated households developed into clan-villages and these into a community of ownership, which worked out again into property in severalty. Free villages and surf villages existed as a late out growth of a primitive organization.

DWELLINGS CARVED OUT OF SOLID ROCK. A unique class of Ancient Dwellings was recently found in Arizona, by Col. Stephenson, of the Ethnological Bureau. They are carved as were those previously found in the same region, in the solid rock but on the summits and not on the faces of cliffs with entrances from above.

LINGUISTIC NOTES.

EDITED BY ALBERT S. GATSCHET, WASHINGTON, D. C.

GUSS ON THE SUSQUEHANNOCKS. The long disputed question whether the Indians inhabiting the Upper and Lower Susquehanna River, and its principal branches, were of the Iroquois or of the Algonkin stock has been taken up again and thoroughly discussed by Abraham L. Guss in a series of four articles, which have appeared in the *Historical Register of Pennsylvania*, Harrisburg, Pa., under the title: *Early Indian History on the Susquehanna* (1883). The portion before us deals mainly with the origin of the local names adhering to the Susquehannock settlements, and the oldest linguistic forms, in which they appear, are consulted, chiefly from the writings of Capt. John Smith. Although these Indians were of Iroquois stock, until a later period brought on some changes, the name of the river is Algonkin, according to Guss, and means (page 32) the "Stream formed by Springwaters." The author has added to his learned and interesting treatise a copy of Smith's map of Virginia (1624), the study of which largely facilitates the understanding of historic topography. Mr. Guss is well known as the author of many treatises on the early local history of Pennsylvania, his native State, and of the States adjacent.

FRIEDRICH MUELLER'S OUTLINES. The latest number published of Prof. Fr. Mueller's: *Grundriss der Sprachwissenschaft*, is the first part of Vol. III and contains on 246 pages the grammatic elements of the following languages of Africa and Asia: Nuba race: Languages of the Ful-be, Nuba, Kunama, Barea, S-umals, Il-Oigob, Sandeh, Dravidian race of the Dekhan: Languages of the Kolh, Singhalese, Dravidians.

NOTES ON CLASSIC ARCHÆOLOGY.

EDITED BY PROF. AUG. C. MERRIAM.

Members of the French School of Archaeology at Athens have been excavating in Delos and have discovered a private house and the street leading to it. These may result in the disclosure of a large portion of the old town, as the work is to be continued.

The English are about to follow the lead of Germany, France and America, in the establishment of a School of Archaeology at Athens. This is another of the many signs of awakened interest in this subject, and appreciation of the value of study upon the very soil where art made its fairest dwelling place. Our School is now managed by Prof. Packard of Yale, and Prof. Van Benschoten of Wesleyan has been chosen as his successor next year. Prof. Van Benschoten will be revisiting scenes already familiar from his travels some years since.

Probably the largest collection of Egyptian antiquities in England, after that of the British Museum, belongs to the Duke of Northumberland at Alnwick Castle. It has been recently catalogued and described by Dr. Birch of the British Museum, in a volume privately printed.

Dr. Max Ohnefalsch-Richter has been making some excavations in Cyprus, during which he disinterred the ruins of an ancient temple near Cythrea, in the district of Nicosia, the modern capital of the island. Both statues and statuettes were unearthed, among them some which are described as priests of the temple, a few being in archaic style and painted. One bore the name of Karys, in which the discoverer sees a connexion with Caria. The temple was dedicated primarily to Apollo, and secondarily to a combination of Apollo and Zeus with his eagle and Victory. Artemis also receives one of the dedications. Apollo is sometimes represented with the calf, sometimes as accompanied by Adonis, from which the inference is drawn that he must have been identified with the Oriental Sun-god, and connected with the Cyprian Aphrodite or Astarte.

The famous medicinal watering place of Bath in England was the Aquae Solis of the Romans, and some interesting traces of their occupation have been discovered from time to time during the past five years. The hot springs appear to have been protected under Roman management by an octagonal structure, built of massive stone and cased inside with lead, beneath the modern pump room. The greatest discovery has been that of a large bath, eighty-one feet in length by thirty-eight feet ten inches in width, with steps complete at its four sides, floored with blocks of masonry, on

which still remains the original coating of lead. The bath was supplied by the hot mineral water, and had a hatch or sluice of bronze for conveniently emptying it. This bath is the centre of a large hall with waiting-rooms about it, in length one hundred and ten feet, in width sixty-eight feet six inches. The floor of this hall is twenty feet below the present street, and above a part of its site are the offices of the Poor Law Board. The ancient Roman masonry stands yet upward of ten feet above the floor of the hall. Very fine fragments of architectural sculpture have been obtained; also a metal mask somewhat similar to those of Dr. Schlieman from Mycenae, several patens and ewers, two engraved tablets, of which one was in cursive characters, a large number of coins, bones and pottery; and lastly, a teal's egg evidently in the position it was laid by the bird against one of the ruined pillasters of the bath in the decayed vegetation. This little token of nature proves that the city of Aquae Solis continued a deserted ruin for a lengthened period after its destruction by the Saxons A. D. 577.

NOTES FROM ORIENTAL PERIODICALS.

By Prof. John Avery.

Journal of the Straits Asiatic Society, Nos. 9 and 10, 1882.

Mr. John Dodd writes of the Probable Origin of the Hill Tribes of Formosa. The western coast of this island is occupied by colonists from the opposite Chinese province of Fu-Kien, while the high volcanic range, traversing it from north to south and sloping down to the eastern coast, is the home of rude, indigenous tribes, numbering, according to Mr. Dodd's estimate, more than one hundred.

These tribes may be classed in two divisions:—those nearest the coast, called Pepowhans, who possess some civilization and acknowledge the authority of the Chinese; and those of the interior, who have not yet emerged from a savage state. The highland region over which the latter people roam is about two hundred miles long by fifty to sixty miles wide. Physically, the wilder population does not resemble the Chinese, except in the high cheek-bone, which, however, is the exception rather than the rule in the northern part of the island, where the primitive type is best preserved. Their hair is lank, straight and black, with none of the crispiness seen among the Negritos. Their eyes are not obliquely set like those of the Chinese, nor do they adopt a similar style of dress. Their dialects also show no affinity with the Chinese language, though some words have been borrowed from the latter, where the two races are in contact. Malay words are more numerous, but these do not seem to form the substratum of their speech.

The writer believes that these tribes are a mixed race; the chief element being a short, round-headed people of Indian type, the true aborigines of the island, who were modified by an infusion of Malay blood, which occured long before the advent of the Spaniards in the 16th century. It is suggested that the first Malay comers, and possibly the original settlers may have been driven to the island by storms, or have drifted thither in a strong ocean current which sets northward along the western coast. The people, when asked regarding their origin, reply that their ancestors came from the south, many "sun-downs" away. Mr. Dodd appends to his article a brief list of words from the Tangao dialect.

The 10th Number contains a paper of great interest, by Rev. J. Perham, on the religion of the Sea-Dyaks of Borneo. In a former paper, which we have not seen, the writer has given an account of the Petaras and other benevolent deities who direct the affairs of the Dyak world from their abode in heaven. The present paper treats of the inferior deities, the rites which keep them in good humor, and the omens by which their will is indicated. These lower beings, who occupy an intermediate place between celestials and mortals, shading off imperceptibly into either class, are called Antus. They are countless in number, and range through every part of the natural world.

Though generally invisible, they sometimes reveal themselves in a material form resembling the human, about three times the size of a man, with rough, shaggy hair, glaring eyes as big as saucers, and huge "glittering teeth." At other times they appear as common men, or take on the shapes of various animals; a favorite disguise being that of a serpent—it may be a cobra or python—in which case it is treated with the utmost consideration, is fed, prayed to, and allowed to escape to the jungle unharmed. This is another example of the ophiolatry so widely observed in the primitive stages of human culture.

The Antus follow the chase like Dyaks, and herds of a species of jackal are reputed to attend them as dogs. They also build invisible houses, and till the soil just like men. Their favorite dwellings are in trees on tops of hills, where a portion of the jungle is usually left for their convenience.

Some of the spirits are good, and others are bad; a good Antu will bestow a rich boon upon him who can seize and hold him by the leg, when he chances to appear; but he generally eludes pursuit. One is most often seen in dreams, and it is not uncommon for a native who seeks communication with the spirit world to sleep alone on some solitary mountain top. The toothsome offering at his side may move some kindly spirit to appear, and bless him with a brave heart in war, abundance in harvest, or cure in sickness. Evil spirits, however, greatly outnumber the good ones, and every disease or other misfortune is laid at their door.

The offerings to the spirits are the ordinary kinds of food esteemed by the natives, and therefore believed to be suitable for the celestial stomach. These are exposed on a brass salver, if presented in the house, or if out of doors, on a little platform roofed over like a shed. It is the spiritual essence of the food that is eaten by the gods; what remains to view being only the outer husk or shell, which may be eaten by the sacrificer. The blood of victims has especial efficacy when sprinkled over a sick person or a growing crop. The Dyaks have no regular priesthood, and any one is at liberty to offer on his own behalf, though old men and persons best versed in the standard incantations are naturally preferred.

The matter of omens enters greatly into the Sea-Dyak's religion, and regulates nearly every act of his life. Birds are most prized for prophetic signs, and certain species, noted for shrill cries, are set apart as sacred. The proper time for putting in the crops, building a house, making war, or doing a multitude of other things is determined by the order and direction in which the notes of these birds are heard; should the right conjunction of these signs fail to occur, the business may have to be deferred many days. Omens are derived also from the movements of various animals and insects, from eggs, and especially from pig's liver. It is a great calamity to find a dead animal or have a swarm of bees settle on one's field; the growing crop is thereby poisoned, and, unless sold, will cause the death of some member of the family.

These facts, out of a multitude that might be stated, show that, if an hourly recognition of the powers of the unseen world and industrious efforts to propitiate them can be called religion, the Sea-Dyaks are a most pious people.

Journal of the Anthropological Institute, August, 1883.

Mr. H. O. Forbes describes a brief residence among the hitherto little known people of Timor-laut, an island of the Tenimber group, lying south-west of New Guinea. The inhabitants vary greatly in physical appearance—some not exceeding five feet in stature, others reaching six feet, with a fine muscular development. The same difference is observable in the hair; it having in some cases the straightness and blackness of the Malays, and in others the frizzled character belonging to the Papuans. The prevailing color of the skin is a rich chocolate brown, though quite black complexions are occasionally seen. The aperture of the eyes is narrow, and scarcely, if at all, oblique. Some crania were obtained by Mr. Forbes, and submitted to Prof. Flower. Two-thirds of the number were brachycephalic, of the Malay type; one was dolychocephalic, of the Papuan type; and the others were intermediate. Such wide differences of physical constitution seem to prove that the people of these islands are a mixture of Malayan and Papuan elements—the former predominating.

They possess considerable intellectual ability, being skillful workers in wood and ivory, and showing an appreciation of the beautiful in nature quite unusual in the pure Malay. In morals they are still at a low stage. Lying, stealing, and unchastity are prevailing faults, though the punishment of these, when detected, may show an innate sense of their criminality. They drink enormous quantities of liquor distilled from the palm, and when intoxicated—an everyday occurrence—are exceedingly quarrelsome. If a man dies a natural death, his body, wrapped in cloth and laid in a boat-like coffin, is deposited on rocks or a platform near the sea, where it remains until decomposed, when some relative removes the skull and stores it on a little shelf in the house. The spirit of the deceased goes to the neighboring island of Maramatta. In case the person came to his end by violence, his body is buried instead of exposed, and if his head was taken by the enemy, it is replaced by a cocoanut, to deceive the spirits. Their religion consists in the propitiation of malevolent deities by incantations and offerings of food. Each individual has an attendant spirit, whose wishes it is for his interest to carefully gratify.

In the same Number Dr. Gustav Oppert, of Madras, writes on the Classification of

Languages in Conformity with Ethnology. Dr. Oppert is dissatisfied with a grouping of languages on Morphological grounds solely, and judiciously says that a true science of language will note the internal as well as the external, the psychological as well as the physiological, characteristics of speech. Since races exhibit marked individualties of thought, and since language is the embodiment of thought, it follows that a psychological study, in a comparative method, of the original speech of the various tribes of human kind will, united with an observation of external forms, afford a trustworthy criterion for judging of race affinity. We observe that languages differ greatly in their propensity to use abstract or concrete terms—some using the former freely, others the latter; and between the two extremes is every shade of intermediate usage. This tendency is best illustrated by terms of relationship; thus, in some languages parents call their children sons and daughters—abstract terms; in others they speak of them as male and female children—concrete terms. Again, in some languages children call each other brother and sister; in others the terms elder or younger brother and sister are used. This peculiarity of expression Dr. Oppert has adopted as the basis of a classification of speech into abstract and concrete languages. Besides kinship, age and sex enter into speech, giving rise to subordinate divisions. Concrete languages are divided into *heterologous*, or those which contain special words, used when persons of different sex address each other; and *homologous*, or those in which both sexes use the same words. Each of these divisions falls into three classes, viz: (1) elder and younger consanguinity are denoted by special terms for each, and difference of sex by the added words "male" and "female," or by change of sound; (2) special terms are used for elder brother and elder sister, but a common one for younger brother and younger sister; (3) a distinct term is employed for each of the four varieties of relationship. Abstract languages are classified under two heads, digenous and trigenous; that is to say, those which recognize two genders, and those which recognize three. By the use of letters and figures the writer presents a scheme in which he would classify all known languages under one or another of the above heads. He takes account also of the outward forms of speech, though assigning them a subordinate value.

This elaborate scheme, which we have not space to adequately explain, points to a field of research which students of language will doubtless come to occupy more fully hereafter, when the more tangible differences of speech shall have been fully observed and classified; but, at present, we can hardly see the superior practical value, over the genetic classification now in vague, of a scheme which would divide languages—as French and Latin—known by indubitable evidence to be closely related, and would unite idioms whose speakers give no other evidence of special nearness of kindship.

Panjab Notes and Queries.

This is a new candidate for the patronage of those interested in oriental research. It is a monthly periodical, edited by Capt. R. C. Temple, and published at Allahabad. As its name implies, it is started on a somewhat novel plan, being designed to gather up and preserve those scraps of curious information which scholarly officials in India are continually coming across; which are often of great value, but are considered too fragmentary to communicate to the larger periodicals, and hence are lost to the general public. It is also designed to be a medium through which persons seeking for information can communicate their wants to fellow-workers.

The publication began in October.

Literatur—Blatt fuer Orientalische Philologie.

Under this title we have received the first Number of another monthly publication devoted to oriental matters. It is edited by Dr. Ernst Kuhn of Munich, with the co-operation of Dr. J. Klatt, of Berlin, and is printed in Leipsic. It is devoted chiefly to reviews and notices of recent oriental works. A full list of new books and shorter publications on oriental subjects is a valuable feature. We have added both these magazines to our list, and hope to glean from time to time something from their pages which will interest our readers.

LITERARY NOTES.

THE OVERLAND MONTHLY.—We should say the "Overland Monthly" comes nearer to our ideal of what a literary magazine should be than any other journal on the Continent. Its pages are replete with information, and its articles are written with that happy combination of style and statement, which makes them interesting without being trashy, and instructive as well as readable. They are entirely free from any attempt at mere popular effect, but are easy and elegant in expression. The

consciousness that there are facts to be made known, and the feeling that the people want facts rather than fiction, seems to have prevailed with the writers. The disposition to pander to some imaginary public taste for the sake of popularity has been the bane of many magazine writers. When this has not prevailed, the other extreme has to often appeared a dull uninteresting way of furnishing information.

CHINESE IN CALIFORNIA.—The overland monthly for November has several articles which will interest our readers. "Under the shadow of the dragon" By Abbot Kinney, is the first. It is a description of the Chinese in San Francisco, and gives some facts about the Chinese as a race. All their institutions from their religion to their language, are of the most primitive type. Their religion is ancestor worship. The images of the joss houses are of heroes, sages and emperors. An abstract idea of God, is not common with the Chinese. The government is an absolute one on a patriarchal basis. Slavery prevails in China. A slave becomes a member of the owners family. Slaves if set free and not reinstated in their native clan are outcasts—have no family ties and no home.

"CENSUS OF OUR INDIAN POPULATION," an article in the same Journal, by Sherman Day, written with the design of "placing the facts in print — not in the columns of a daily news paper, to be used for kindling the household fire, but in a magazine that can be bound and kept for future reference." There are 18,000 Indians in California, but three-fourths of them, or 13,778, are outside of a connection with any reservation or agency. The total population of Indians in the United States including Alaska, is 336,098. The number of emigrants arriving in this country in the year of 1882, was 780,000. The query arises whether there has not been a decrease in the Indian population. Col. Garrick Mallory represents in his pamphlet, that the Indians on the aggregate are as numerous as they were formerly. This contrast between the Indian population and the white, would show that there has been a great decline. The Indians are not as numerous as the *negroes*. The ratio of the Indians to the total population is one to 150. Compared with the negroes one to 18. In California, compared to the Chinese one to 4. It apaears that the census reports do not give the number of the Indians, except such as have become citizens. The author has given two tables, one showing the Indian population in the different states, and the other showing what it is in California divided according to the counties.

We learn from the article that Mrs. Helen Hunt Jackson [H. H.], has been appointed by the Indian bureau as a special agent, to investigate the condition of the Mission Indians of California. Mr. Abbot Kinney of San Gabriel, Cal., has also been appointed as assistant.

THE INDIANS AND THE WAR DEPARTMENT.—The Report of the War Department for 1880—1881 contains, among some allusions to the Geography of the Territories, and the rapid settlement of the new region, considerable matter concerning the Indians. The various expeditions against the Indians would indicate, that the army enjoyed the sport of chasing the fugitives to their hiding places, and took delight in ferreting them out as if they were wild beasts. Of course it is made to appear that there are offenses, which demand just such treatment. The attacks, upon soldiers are compared with the revolt against the Indian agents, who have deprived them of food and sustenance, and all acts of the kind are construed as murder, demanding retaliation and extermination. When we, however, read through the lines and learn how great provocations the Indians have had, and how little defense from the Government they receive, these expressions do not seem just and manly, and the exploits do not seem so brave, as they are represented. A few quotations will reveal the spirit and the conduct of the War Department, as, they contain acknowledgement of weakness on the part of the Government, but show also what manifest injustice has been practiced upon these helpless creatures.

"Peace with the Utes, depends largely on the barrenness, both in an agricultural and mining view, of the land occupied by these Indians, and it is to be hoped, in the interest of security for the Indians and peace for the country, that the condition of barrenness may be confirmed by subsequent examination." In another place, it is stated. "That the trouble about food has been and always will continue to be, the source of trouble with the Indians. The Indian agents punish or seek to control the actions of the Indian, by, with holding provisions from them." "The want of forage, and the failure of supplies, hindered the army from carrying out their designs." Nothing is said of the condition of the Indians at this time. Again "It is believed that if the Mexican Government would drive from its territory the Apaches," it would result in the addition to its habitable territory of valuable mineral and pastural lands!" Again "In Western Texas the scouting parties driving the Indians be-

fore them, are closely followed, and, when the danger is not too imminent, preceded by the railroad surveyors locating railroad routes." These items are followed by a statement in which the attempts of the agents to protect themselves by peaceable measures are deprecated, but it is acknowledged, that there are many other persons in the vicinity of the Indian reservation, who make a business of stealing stock, and to give in exchange whiskey, guns, and ammunition. Turning from these southwestern Indians to the Department of the Columbia, we find that the whites are disputing the land, claimed by the Indians. "The flow of emigration to this country is so constant, as to require constant care to prevent collision." "The Indians in the vicinity of the Spokane River, are engaged in frequent disputes with the whites. In the vicinity of the Umatilla Reservations, the Indians are uneasy and timid about going off the reservation, on account of the outrages so frequently committed upon them." "The Piutes and Bannocks, are dissatisfied because of their natural desire to return to their old home." At Spokane Falls, "the settlers are somewhat excited about the Indians," but all the trouble was caused by whisky which can be readily enough obtained. The Pimas and Maricopas, still make good their boast that they have never killed a white man. "It is stated also that Victorio was unjustly dealt with in the first instance, by the abrupt removal of his people from Ojocaliente, New Mexico, to San Carlos, and such removal if not a breach of faith, was a harsh and cruel measure."

BOOK REVIEWS.

Manual of Taxidermy. A complete guide in collecting and preserving birds and mammals. By C. J. Maynard, Boston, 1883.

The practical hints given in this little work will be very valuable to amateurs in Taxidermy and in fact to all, who are interested in the study of bird life. Seventeen wood cuts illustrate the methods in preserving and mounting birds, skins, and the letter press is full and definite in its instructions.

The Mounds of the Mississippi Valley. Historically considered. By Lucien Carr, Assistant Curator of the Peabody Museum of Archaeology and Ethnology. Reprint from Vol. II, of the *Memoirs* of the Kentucky Geological Survey. 4 to pp, 107.

This essay is a very earnest plea in favor of the view that the mounds of the Ohio Valley and those generally in the Mississippi basin are constructions of the tribes found in these localities by the early explorers. To prove this thesis, Mr. Carr thinks it necessary to establish three points by a long array of quotations; first, that the Indians when first known to the whites, depended largely on agriculture for subsistence; secondly, that they were sun-worshipers, or regarded that orb as their chief divinity; and thirdly, that they were accustomed to erect mounds, embankments, earth-walled forts, and the like simple structures.

The evidence brought forward no doubt does establish these three positions; and indeed, every student who has given much time to reading the accounts of the early explorers must already have convinced himself that such was the case. Ample testimony to the construction of earthworks by the modern Indians was presented in this journal (AMERICAN ANTIQUARIAN, Oct., 1881), and earlier by Mr. E. G. Squier. But the question is, are they *such* earthworks as those usually ascribed to the "Mound-Builders?" On this point, we are obliged to say Mr. Carr is not so satisfactory—in fact, he is not ingenuous. He discards as "illusions" the classification of earthworks advocated by careful observers who had studied and measured many hundreds of them. Whether he has ever seen a mound himself he does not tell us; but so far is he from speaking at first hand, that he quotes Bancroft's descriptions, who confessedly knew nothing whatever of the matter except through the volumes in his library!

Again, Mr. Carr (on page 4) certainly conveys to his reader an erroneous impression as to Mr. Squier's views. It is true that this able investigator "modified his views" in reaching the conclusion that the earthworks of Western New York were of Iroquois origin. But Mr. Carr should have added that the study of these remains convinced Mr. Squier all the more firmly that the great Ohio mounds, etc., proceeded from a totally different people, and one in a decidely higher stage of culture. As against this opinion, the result of wide and well-trained observation in the field, the judicious reader will scarcely attach much weight to conclusions framed in the closet from descriptions at second and third hand.

In similar manner, his intimation that there are no "animal mounds"! based as it is on various extracts "summarized by Bancroft," will seem comically false to those who have surveyed these remarkable monuments. The clinching argument

which he advances, pp. 75—77, of the discovery of iron in the Ohio mounds, proved too much to prove anything. Even Mr. Carr does not assert that the Algonkins or Iroquois constructed the great earthworks of Ohio after the advent of the whites. Iron, glass, and silver coins and crosses are not unfrequently found in the most ancient tumuli, for the simple reason that these were selected as burial spots of recent tribes. There is no evidence that such was not the case in the instance referred to.

In his eagerness to extirpate the "Mound-Builders" root and branch, Mr. Carr has allowed his zeal to carry him too far. It is useless to deny the conclusion of all competent observers that the earthworks of Western New York and all those which we know were erected by the Algonkins, Iroquois and Dakotas, differ widely and positively from those which are typical of the Ohio Valley. They belong to another stage of culture, as do also their contents. It is not enough nor is it fair to readers to quote what Mr. Squier says of one single specimen of terra cotta from Western New York (p. 98) as if he had meant that the pottery in general from that section equalled that from the mounds, whereas he said just the opposite.

We need not proceed further in this criticism. It is evident of what has been said that Mr. Carr's Memoir is that of a special pleader who is determined to discomfit his adversary. Regarded in this light it is a learned and acute production; it shows an extensive acquaintance with the literature of the subject; and it is quite likely that so far as it is a destructive essay, it will do good by brushing aside various archaeological cobwebs. D. G. B.

Ancient Scottish Lake, Dwellings or Crannogs, by Robert Munro, M. A., Edinburgh.

This is a very valuable work and written on a subject which is comparatively unknown. It appears that there is an immense number of these Crannogs throughout Scotland and Ireland. They differ from the Palifittes of Switzerland in that they are solid, the foundations being of earth surrounded by stone. They were erected in the lake for the purpose of defense. Many of them belong to the historic period. They began to be known in 1857, when Dr. Robertson called attention of the Scottish Antiquaries to their prevalence. Dr. Munro began excavating in 1878. It has taken an immense amount of digging to exhume the tokens of ancient residents but he has continued with Scotch pertinacity until an immense amount of information has been furnished. We would call attention to the manner of exploring and investigation in Europe for a contrast with that which is in vogue on this continent. Either the greed for relics is not as great or there is more desire for solid information. The fashion here is to remove the relics from the locality as soon as possible, leave the data of information partially destroyed, and then throw the relics into a museum where they have the effect to fasten the ignorant gaze of curious spectators, but furnish no information of value to any one. We deprecate the practice beyond measure and would call attention to Dr. Munro's book as giving a much more intelligent method of action. This is the way the Lake-Dwellings in Switzerland were exhumed, and in which cave hunting has been carried on. We do not believe that gravel beds can be as thoroughly explored and consequently the information furnished is very unsatisfactory. More theories have been based on small amount of material drawn from gravel beds, than from any other source. Dr. Munro's book is full of illustrations. One point is worthy of attention. The distinction between the ages such as stone, bronze and iron does not seem to have prevailed here, for the relics exhumed from the Crannogs are of bone, horn, stone, wood, metal and iron. The stone relics resembling those of the so-called polished stone age, the bronze resembling the ordinary relics of the bronze age and yet all these found mingled with iron relics. Dr. Munro does not find the distinction in the Crannogs of Scotland, that Schliemann does in the buried heaps of Ilium, or at least he does not undertake to draw the distinction in the different periods of occupation. We very cordially recommend this book to our readers, and hope that it may meet with a ready sale on this Continent.

A History of Latin Literature, from Ennius to Boethius, by George Augustus Simcox, M. A., Fellow of Queen's College, Oxford.

These two duodecimo volumes from the press of Harper and Brothers form a companion set to Mahaffy's History of Greek Literature published by the same house. As Greek Literature is more extensive than Latin, Mahaffy confined himself to the proper classical period including Aristotle; the present volumes, on the other hand, embrace the entire period which contains any Latin literature of importance to the general reader. The purpose of the author may be seen from these words: — "My original aim in writing is to do something towards making Latin literature intelligible and interesting as a whole to the cultivated laity who might like to realize its literary worth, whether they read Latin or not." This plan is kept in view throughout the

work. The usual systematic treatment of the subject, by detailing the various incidents of an author's life in set manner, with all the discussions about dates supposed or fixed, is not a part of the scheme, and rather rarely entered upon. "In order to compensate in some measure for any want of precision in the text," an excellent chronological table is prefixed to each volume, where dates, list of works, and much contemporaneous historical matter are arranged in an admirably convenient, concise, and trustworthy form. In the text proper, the task which Mr. Simcox sets before himself is to trace clearly the rise, progress and development of the literature, and especially to present a series of disquisitions upon the character of each individual author as evinced in his productions, upon the qualities and merits of his style, the sources from which he drew his manner of treating these, his influence upon his contemporaries and his successors — in a word, the problems that fall within the province of high litertary criticism. Roman characters and sentiments are continually contrasted with the Greek, as individual writers with their compeers, their models, or their imitators. Subtile observation meets us at every turn, in which the whole literature of history, from Egypt in the Nineteenth Dynasty and England in the nineteenth century, may be drawn upon for parallels or contrasts. The chief works of each author are taken up and criticised rather than described, talked about rather than quoted. The strict attention of the reader is demanded continually, and often he will be arrested by a clever aphorism or wide-reaching deduction which will challenge him to pause and debate. The author's thorough comprehension of the subject yields him a mastery that neither gropes nor wastes time. His attitude in relation to many of the works against which the charge of spuriousness has been urged is eminently conservative. We cannot forbear quoting his acute remark upon a treatise of Tacitus': — "The Dialogue on Oratory is so like ordinary Latin, and has so few of the peculiarities of Tacitus, or even of the silver age, that it has been doubted whether it was his work at all, for the same reason, as modern readers might doubt the genuineness of Mr. Carlyle's early essays in the Edinburg Review if he had not collected them himself." So profound and faithful a study of a widely interesting subject commends itself to all students of literature.

The doctrine of Sacred Scripture, a critical, historical, and dogmatic inquiry into the origin and nature of the Old and New Testament, by Geo. T. Ladd, D. D., Professor of Mental and Moral Philiosophy in Yale College, Charles Scribner's Sons, New York, 1883.

Prof. Ladd is one of those scholarly theologians whose writings it is a delight to read. His style is fascinating and the material which he furnishes is always fresh and interesting. Great changes are going on in theological thought. These changes do not involve a radical overthrow of accepted views, but are destined to present the old truths in a new light. The studies of theologians must be broad and in a good sense liberal, in order to keep up with the progress of the age. Scholarship is too full of honest investigation and of original discovery to allow dogmatism to reign. The arbitrary in theology is to be overthrown. The sincere and teachable spirit is to take its place. There has been a large amount of Biblical criticism, which has shaken the common view of inspiration. Some of this may be styled destructive. Dr. Ladd's book is not destructive, but constructive. The author acknowledges that there has been an insecurity in the Hebrew and Greek text, which will not admit of the theory of verbal inspiration but he maintains that the Bible is genuine, and substantially reliable both in its form and statement, and that the solidity of its many ideas remains, notwithstanding the changes made, in the orthography and grammatical construction. The soul of divine truth is contained in the scriptures, and faith may be the stronger for being driven from the mere external form to the soul. There may be with Dr. Ladd too much credit given to the substantiality of the views which would reverse the order of the books of the old testament as to the time of their appearance, but on this point he is candid and in fact is willing to wait before deciding. The progress of thought as well as the growth of language would certainly prove that the books of the Old Testament were written very much in the order in which they appear. In the Hebrew Bible the Hagiographa was probably arranged or compilied after the days of the exile, but the Pentatench and the prior and posterior prophets we believe were written, and known to the Jew's before Nehemiah or Ezra edited them. We speak however as an archaeologist and not as a philologist. In fact our faith in Philology, is not as great as in other oriental and archaeological sources of information. These tend to opposite conclusions at present, and we believe that archaeology is destined to reverse some of the conclusions of the critics.

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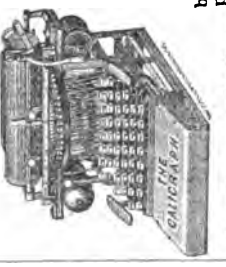

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VOL. VI. MARCH, 1884. NO. 2.

LECTURES ON POLYTHEISM.

Given by F. G. FLEAY, to the Positivist Society, at Newton Hall, London, May 13th, 20th and 27th, 1883, on the Position of Polytheism in the Historical Development of Religion.

The primitive religion, ancestor-worship, in those early times which transcend history, must have passed through three stages, the first, worship of the ancestors of the individual worshipper; the second, that in which the ancestors of a family were adored by the family in common; the third, that in which the ancestors of a tribe were worshipped in public; this last stage involves the existence of a priesthood. I shall not here trace the evolution of these stages; the influence of hope and fear of the unknown; the important part played in such evolution by shadows and dreams; and so on. I can refer you on these points to Mr. H. Spencers's admirable Sociology. I may, however, just mention that in a letter with which he honored me on this subject, he admits that I may be right in assigning a much more extensive influence to the phenomena called "special illusions" than has hitherto been acknowledged or supposed. Further detail would be beyond the scope of these lectures, but I cannot omit to point out the close connection between ancestral worship and that of Fire, whether the fire of the domestic hearth, so closely bound up with the family Lares and Penates, or that of the central public fire of Agni, Hestia or Vesta. We must not forget that the family hearth was the family altar, that the house was the temple (ædes) of the family gods, and the temple the house of the public gods; that the tomb was the house of the departed ancestor, and therefore the temple of the now living deity; that temple, tomb and house, tribe and family, patriarch, ruler and priest, were at first undifferentiated; and that in discussing the primitive times we must be on our guard against the pitfalls of our highly differentiated modern speech.

Especially is this necessary in this hearth or fire worship, for besides the instances already pointed out, we meet with a constantly arising ambiguity from a confusion or rather we should say, an identity between the fire on the central hearth, raised in honor of the ancestral deities and the heaven sacrifices offered in the flames of the rosy dawn or the crimson sunset, contemporary with the earth sacrifice beneath. This identity of Dawn worship wlth morning sacrifice to ancestors or Fire worship, and the distinctness of these from Sun worship is the key to many difficulties which have misled the etymological school of mythologists and cannot be too carefully borne in mind.

We next come to the stage of religious evolution which involves the worship of organic nature especially of animals. This universally distributed cultus, whether it be that of the beaver by the red-skin, of the jaguar, by the Braziilan, of the wolf in Guinea, of the ibis and bull by the Egyptian, of the serpent by the Hebrew, undoubtedly is the natural, and in the light of the law of subsumption which I shall enunciate presently, will be seen to be the historical successor to the worship of ancestors.

In fact the same phenomena of dreams and spectral illusions on which the worship of ancestors was founded, would necessarily lead to animal worship. Animals would have doubles or ghosts attributed to them, just as men would; and in both cases the same feelings of fear and desire to propitiate would be excited in times when the animal world had not yet been subdued and domesticated.

Another great division of what Comte calls fetichism next arises. The worship of those portions of inorganic nature which exercise important influence on man's condition, such as the storm cloud, with its attendant rain and thunder, givers of fertility or inflictors of devastation, or the heavenly bodies, the sun, the moon, the stars, the givers of light and warmth, or the inflictors of drought and madness. It is as we shall see from this division that Polytheism evolved.

What then is Polytheism? And how does it differ from the worship of heavenly bodies, or meteors, or storms, or trees, or animals? These latter worships involve a multiplicity of divine objects of adoration as much as Polytheism does. The distinction ordinarily laid down is that, when a star or cloud is regarded as a god, that is fetichism; but when it is regarded as the abode of a god, that is polytheism. Taken in this abstract way I do not think the distinction one likely to have marked a true transmission of religious system in such early times, and I agree with Dr. G. LeBon, who says, "I doubt if such subtle differences were ever firmly implanted in the brain of the cloud worshippers." In fact from the very introduction of ancestor-worship, everything must have been recognized in due succession as two-fold; as the abode of a ghost or double, as well as a

tangible or visible thing; first man, then animal, then planets; then inanimate things, terrestial and celestial, would unquestionably be deemed to be of this duplex nature. But Polytheism does not merely distinguish the god from his abode, but it also differentiates the god from the ghost or double of the abode; as of a different and higher nature, usually anthropomorphic. The ghost is to the eye a repetition of the abode itself; the god always organic. Hence I would define Polytheism as a belief not merely in deities separate from the material bodies which they reside and preside in; but also in the assimilation of those deities to the deified ghosts of departed ancestors or animals. And if it be objected that theism contains reference to deities in all polytheistic systems as if they were not separated rulers, but still partook of the material properties of their domains, I reply that this is true, and that, just so far as it is true, these systems are not Polytheistic but Dynamolatrous,which merely implies that the systems of religion as we know them are mixed and contain much debris of previous systems.

Out of Polytheism grows Monotheism, an unfortunate name, since it rather suggests the unique creator of philosophical Deism than the supreme god of any of the great historical religions. For outside such Deism it would be vain to look for a pure Monotheism anywhere, that is to say for a belief in one god apart from subordinate gods, intermediate spirit, or mediators of some kind. The belief in a chief god who is supreme over the universe, is the sense in which we must interpret that Monotheism which succeeds to Polytheism.

At this point in the history of religion the whole character of its investigation changes. Up to this epoch the religions we have treated of, have left their indelible marks on the customs, manners, monuments and languages of their adherents, and from these they have to be resuscitated and reinforced. From this point onward they remain to us in the distinct literary form of sacred books with definite rituals and cultus. As my special subject in these lectures is only Polytheism I might stop here in the sketch of religious development, as I understand it, but I think it will conduce to the clearer conception even of my limited topic if I summarily state (without attempt at proof on this occasion) my own views of this later evolution of religion.

The great book religions which began with a modified Polytheism under a supreme god, or trinity of gods, and gradually evolve the purer monotheistic beliefs separate into two classes, each including three religions, viz: Brahman, Zoroaster, and Buddhist, in the first class, and Judaism, Christianity and Mohamedanism in the second.

The central idea of Brahamanism appears to me to be the all pervading character of the deity as contrasted with the limited local sphere of action of the earlier deities, whether polytheistic,

polydynamic, animal or ancestral; that of Zoroaster is the ultimate display of his power; the power being in many respects analogous to electricity and other polar forces, and not positive merely as in other religions; thas of Buddhism is the vast central universal life into which all other life tends to be absorbed; that of Judaism (dating not from the myths of Moses. but from the redaction of the law after 630 B. C.) is the eternal lawgiver; that of christianity is the all pervading love which is the source of hope and all good, that of Mohamedanism is the wisdom of the Divine Will which determines all Past, Present or Future.

It appears that religion begins in worship of ancestors; that this worship passes through three stages — individual, family and national; that this is succeeded by animal worship, and animal worship by adoration of the energies of nature, especially the storm and the heavenly bodies. This passes into polytheism, when the natural bodies are not only regarded as separate from their habitats. but are also anthropomorphized, or it may be zoomorphized. Directly this takes place, some one of these deified powers assume the highest rank and the transition to monotheism is begun. Now at this point I wish especially to call your attention to the identity of order in the development with that which I laid before you in my third lecture on education of children under fourteen; it is the inverse of the hierarchic order of the sciences. We have the god first of the individual, then of the family, then of the nation, then of organic nature, then of inorganic nature, and finally of the universe. And in like manner we shall, I think, find that the historical development of the great book religions agrees with the direct scientific order of philosophy, provided proper allowance be made for the interference produced by contacts and collisions of different national faiths. Thus we find Brahmanisn developing the idea of God as omnipresent in space, which notion correlates to the Mathematical group of sciences; Zoroasterism develops the idea of god as power, which correlates to the Physical group; Buddhism dwells on the idea of universal life, which correlates to the Biological group, and so Judaism, Christianity, and Mohamedanism respectively correspond to the Social Ethical and Psychological groups, in developing the ideas of God as law, god as self-sacrificing love, god as wisdom. The more one uses it as a means of classifying historical events of every kind, the more one becomes convinced that it is in the order of the seiences that we find the key to problems still regarded as insoluble.

Thus far I have spoken as if each national belief had developed independently, without interference from the outside; but this was far from being the case. The rate of national development in religion as in all other things, varied from numerous courses. Hence, historically, we find contacts and collisions between re-

ligious faiths in almost every possible state of development; and it is desirable to ascertain whether any general law can be laid down as the results of these collisions. I believe that the following statement will be found to include such a law. When there has been, in consequence of conquest, of heretical teaching, or any other cause, a struggle between an established national religion and any other form of belief, one of two things must happen: either the old faith gets the better in the contest, in which case the new doctrine simply disappears, and things go on much as if the struggle had not happened; or the old faith gets worsted, in which case the new one is nominally and officially adopted; but the old belief still remains, whether acknowledged or unacknowledged, in the hearts of the people and in many cases is vigorous enough to enforce an open recognition of this fact. In this case its deities are either admitted along with the new, but on a lower level, or they are gradually transformed into beings of inferior grade altogether. This law is so important that we might go into more detail with respect to it.

To begin, then, with the simplest case, suppose that a tribe of ancestor worshippers is, from conquest or other reason, compelled to adopt the ancestors of another tribe as gods; if my law be true, these new gods will supersede but not displace the old ones, and in the compound genealogies that will be framed, the newly imported gods will be set down as ancestors of the aboriginal deities. We look for an instance of this in Egyptian mythology, and it is of continual occurrence in the genealogies of the Greek heroes; as far as I have been able to trace results elsewhere, the law holds always true; at any rate I have not found any instance that controverts it.

If, again, an animal worship is interposed on an ancestor worship, the ancestor worship will not disappear, but will spontaneously modify, so as to almagate with its successful competitor. It may, indeed, go on independently for a while, but the usual ultimate result is a combination of the two with the divine animals recognized as the ancestors of the divine men. Hence the tracing of so many tribes as the descendants of bears, deer, etc., usually explained on philological grounds. I am far from denying the value of philological investigations in comparative mythology, but the hypothesis put forth with regard to times anterior to any possible direct investigation, must be carefully examined and not received on authority merely, even if the authority be that of Sayce, Muller or Cox.

Of course these writers are far too skillful to advance altogether unfounded theories, for there is very much of valuable result contained in their writings. But all their theories are overworked. They are applied to cases where they have no natural relation to the phenomena under examination, and the result

is that there are not only the profoundest differences between the several results of these justly renowned professors, but not one of them has produced a decently self-consistent explanation of any one mythology, yet in so comprehensive a subject as this consistency is the test of truth. It is, of course, impossible for inconsistencies to be true, and in the enormous mass of details contained, let us say, in polytheism, we cannot conceive that any consistent explanation which embraces all the phenomena can possibly be false. If, however, on the one hand, the divine animals have the position of earliest ancestry ascribed to them, and thus modify the ancestor worship; on the other hand their own nature is frequently modified and they become anthropomorphized to a greater or less extent. Still more strongly does this phenomenon appear when the storm and sun worship comes into contact with earlier ancestor worship. Storms, rains, sun, moon. stars, lightning, become so anthropomorphized in their progress to the position of aboriginal ancestors that the whole nature of the religion is changed. Instead of fetichism we find polytheism. On the other side, the ancestors become so assimilated to their new progenitors that in the storiesof their deeds we find historical details mingled with descriptions of natural phenomena to so great an extent that we cease to be surprised at the utter failure of those who insist on a merely naturalistic explanation of their exploits, a failure nearly as great as that of those who require a purely historical exposition. Thus, to take a familiar instance. Ulysses, who visits the regions of the dead, puts out the eye of Polyphemus, stays in the island of Calypso etc., is utterly inexplicable as a historical man, but is, as I have tried to show, perfectly intelligible as the double of Hermes, the twilight. Again, Ulysses, the king of Ithaca, the ruler over flesh and blood Grecian men, the son of Laertes, is altogether a different being from a twilight god. He is even as one of ourselves, a veritable man. These two aspects must be reconciled. As far as I have seen, they have not been reconciled by any treatment of mythology or religious history yet proposed, They have been superposed by ingenious theories of personification, of epithets, of mistakes in the meaning of like sounding words; but they have not been reconciled. We arise from the perusal of the theories of the recent school of mythologists with the same feeling as when we have witnessed a clever conjuring trick, or solved some Chinese puzzle, but not with the same feeling as when we have read the "Principia" of Newton, or the "Origin of the Species" of Darwin.

Yet to me the mere collision of different faiths appears sufficient to explain all such phenomena without any subsidiary hypothesis. The ancestor worship of Ithaca, the worship of Odysseus and Laertes comes into contact with the Polytheism of the Cronids, and affiliated to Poseidon. Each city, island or tribe tries to identify

the exploits of its own special ancestors of a completed genealogy with those of the newer and greater god. The deeds of the traveler Odysseus are assimilated to those of Hermes, his newly assigned ancestor, and the myth gradually assumes its present form. I am not now going into detail on this or any other Greek myth. I hope to do so hereafter; but at present I want merely to show you my way of looking at these phenomena. You may, if you please, regard it as merely a hypothesis of mine, unproved at present, but to be tested at some length in the two next lectures. All I ask here is, that you should clearly see what the hypothesis is.

I might stop here in the question of collision of belief, just as before, in that of direct development, as I only profess to be treating of Polytheism, and say nothing of what happens when Monotheistic belief comes in contact with Polytheistic, or Fetichistic with ancient or ancestor worship. But as my explanation of the earlier phenomena is merely an adaptation, *mutatis mutandis*, of what we know to have happened in these late cases, I must remind you briefly of a few facts familiar to all of you. You know how as Buddhism, spread and prevailed over the other beliefs of these portions of the east where it has obtained a permanent footing, it was obliged to tolerate, if not to adopt the polytheistic and other popular doctrines of the masses in these parts; you know how far the popular doctrines of the Hindoos are from pure Brahmanism. Still more familiar is it to you that the beliefs of our Norse forefathers in Odin and Balder, were so far from being extirpated by Christianity, that traces of them survive among us to this day; you know that our so-called Christian festivals, Easter, Christmas, and so on, the names of our week days and much else, can be distinctly traced back to the Norse faiths; and what is still more important, you know how these Norse religions in the North and the Greeco-Italic religions in the South, reacting on Christianity, forced it to adopt the deities under the name of saints, the old festivals with new nomenclatures, the old legends in sometimes very slightly modified forms. You know how Christ, Peter and Judas in many an old tale have replaced Odin, and Loki, and how Frigga or Here, the Queen of Heaven, has practically reappeared in the Virgin Mary. Well, my position in this matter is practically that which Lyell took in geology. I believe that the same causes which we know to have been at work in historic times are sufficient to explain the phenomena of still earlier times, and that these causes being sufficient, others are not to be needlessly invoked.

These main principles thus inadequately set forth now, for want of time, I hope to illustrate in succeeding lectures; at any rate, so far as the ancient forms of polytheism are concerned. I will recapitulate them for sake of clearness. The first law is

that man's religious development has taken place in the order of expanding environment, viz.: that of individual, family, tribe, organism, earth, planet, universe; the corresponding objects of worship being ancestors of individual, of family of race, animals and plants, heavenly bodies and meteors, anthropomorphized. This order agrees with the educational development of the races, as set forth by me in my previous lectures here. The second law is that the so-called monotheistic religions, fall into two groups, the one developing specially the idea of an omnipresent, omnipotent life, the other that of an eternally wise and benevolent law; the former pantheistic, the latter theistic. The third law is, that when two religions have in any way collided, the one remains supreme, but does not escape modification; the other is overcome, but does not lose existence; and, moreover, in all genealogies or lists of any kind that may result from the interaction of the two religions, the order is invariable, viz.: the new faith takes the first place the ancestors, etc., of the older faith being subjoined to those of the new.

We are now in a position to recognize one of the most fertile causes of errors in this subject. It arises from the comparisons of isolated phenomena, without regard to the general purport of a whole mythology, or the historical position of the religions from which the instances are taken for comparison. For example, Mr.Cox compares Tyr and Savitri because each has lost one hand, with a view to identify these divinities. In like manner he sees in Odin the Greek Cyclops, because he has one eye. Now, if there is anything clear in these mythologies, it is that Tyr is storm and Savitri sunrise, Odin the supreme all father, and Pypolhemus, the night-darkness and such identifications, on such grounds, are worse than childish. Again, the fairy tale editors, with hardly an exception, classify their tales by the occurrence of a swan skin or a pair of seven-league-boots, in them, and we know how slight the results are that they have obtained. Until they get at the central idea of each myth or fairy tale, and this can only be got at by just such investigations as enable the natural historian to classify his specimens under genera and species, that is to say, by investigation into the history of each individual story, combined with investigations into the history of the religion it belongs to, until this central idea could be got at in each case; so true classification much less any true affiliation will be obtained.

Thus it is that at the present time in spite of the many valuable facts that have been ascertained by the inventors and advocates of the Sun, Dawn and Storm theories, these facts still remain isolated and unharmonious. The promulgators of these theories have been too interested in the special doctrines they were advocating to be able to take a sufficiently large view of the subject generally, and their energies have been dissipated by controversies with each other. The result has been that

no one of these theories has succeeded, either in attaining general acceptance or in avoiding public ridicule, and in consequence of the ridicule much that is demonstratably true in the work of Max Muller, Cox, Kuhn, Schwartz, Breal and others, has been far from being so generally accredited as it ought to be. On the other hand the immature generalization of those writers who are unwilling to leave any phenomona in heaven or earth unaccounted for in their philosophy have been, in this country at any rate, received with far too much laudation.

It will not be needful for me to point out how incomplete and unhistorical all *a priori* teaching is. It may be needful for me to say a few words in defense of my future proceeding in the two next lectures, in which I shall have to bring before you a number of details of these old polytheisms which may seem to you the mere husks of dead beliefs, long since devoid of nourishment for any sane creature, mere rubbish, to be carted away and forgotten. But unless you ignore the great doctrine of continuity in history, you cannot set light by details of those faiths from which our own practical beliefs have developed, nay, which often survive amongst us in their original or scarcely altered forms. It is true that life being short, the results attained by a long and tedious development of the race have now to be quickly reached by the individual in the various stages of anccstor worship, animal worship, meteor worship — polytheism and the rest — having to be condensed into a scarcely noted epoch of our childhood. In a year or two we pass through such growth as represents all the successive ages from man's first erection of a tomb-temple as an abode for his dead ancestor to the glorious poetry of the Homeric Gods. But it is also true that polytheism has left in our literature, our education and our art such impress as cannot be understood without very extended detail, and to this detail we do in fact devote a portion of our higher school education.

If then, I ask you to give to the polytheism of other races, especially to that of our own race, some of the same attention which you have given to that of the Greeks and Romans, it might not be so unreasonable, but when we consider that a vast amount of what is now considered in the domain of science, was in polythestic times included in that of religion, that for instance, no natural history existed apart from the observations made in animal sacrifices, no astronomical science apart from the observations of the sky made for religious purposes, it becomes clear that not only the history of religion, but also the history of science demands of us an acquaintance with these early forms of polytheism. Moreover they can be systematically studied for they are for the most part systematically proved. Stndy of ancestor worship, beyond its most general phenomena, would become, even if we could get at its details, a tedious repe-

tition of the same thing over and over again, one ancestor and another ancestor would not differ in important characteristics. Even animal worship has comparatively little interest in it, but to trace in polytheism the classification which these early people made of the natural phenomena of the heavens; to observe the relative importance which they assigned to each, to watch the unconcious metaphors by which they humanized the mighty energies of nature, to develope the historic connection between the forms of beliefs which seem to have no external likeness, to seek out the fragmentary forms of these once living faiths which have survived either in isolation or combined into new forms, to dissect these hybrid animals and restore the originals of which they have been combined, all this is a fascinating and not altogether a useless study. Of course I cannot give you very much investigation of this kind in two lectures. I shall have to assume much that in a longer course would admit of detailed proof, but I trust that in which I shall give you there will be enough to show that I have worked in a scientific spirit.

SONG OF ALTABISCAR.

BY WENTWORTH WEBSTER.

A cry is heard
From the Basque mountain's midst
Etcheco Yauna. * At his door erect
Listens and cries, "What want they? Who goes there?"
At his lord's feet the dog that sleeping lay
Starts up, his bark fills Altabiscar † round.

Through Ylbaneta's pass the noise resounds,
Striking the rocks on right and left it comes;
'Tis the dull murmur of a host from far,
From off the mountain heights our men reply,
Sounding aloud the signal of their horns;
Etcheco Yauna whets his arrows then.

They come! They come! See what a wood of spears,
What flags of myriad tints float in the midst!
What lightning-flashes glance from off their arms!
How many be they? Count them well my child.
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,
13, 14, 15, 16, 17, 18, 19, 20.

Twenty, and thousands more!
'Twere but lost time to count.
Our sinewy arms unite, tear up the rocks,
Swift from the mountain tops we hurl them down
Right on their heads,
And crush and slay them all.

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*"The master of the house." the usual respectful address to a Basque proprietor o any rank. His wife is "Etcheco Andrea," the mistress of the house.

†Altabiscar is the mountain on the east, Ylbaneta, that on the west of the supposed scene of conflict.

What would they, in our hills, these northern men?
Why come they here our quiet to disturb?
God made the hills intending none should pass.
Down fall the rolling rocks, the troops they crush!
Streams the red blood! Quivers the mangled flesh!
O! what a sea of blood! What shattered bones!

Fly, to whom strength remaineth and a horse!
Fly, Carloman, red cloak and raven plumes!
Lies thy stout nephew, Roland, stark in death;
For him his brilliant courage naught avails.
And, now, ye Basques, leaving awhile these rocks,
Down on the flying foe your arrows shower!

They run! They run! Where now that wood of spears?
Where the gay flags that flaunted in their midst?
Rays from their blood-stained arms no longer flash!
How many are they? Count them well, my child.
20, 19, 18, 17, 16, 15, 14, 13,
12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1.

One! There is left not one. 'Tis o'er!
Etcheco Yauna, home with thy dog retire.
Embrace thy wife and child,
Thine arrows clean, and stow them with thine horn;
And then lie down and sleep thereon.
At night yon mangled flesh shall eagles† eat,
And to eternity those bones shall bleach.

The above is a translation of some Basque lines which appeared in the "Journal de l'Institut Historique. Tome 1st, premiere Annee, Paris, 1834." The author of the article which forms the introduction to the song, M. Garay de Monglave, asserted that it was one of the songs preserved among the Basques from generation to generation; that he had seen in the possession of the Comte Garat, an ancient MS. written in two columns on parchment, which the celebrated La Tour d'Auvergne, the first grenadier of France, had received from the Prior of a Convent in San Sebastian, Spain, when he went there to treat for the capitulation of the city in 1794. M. Monglave asserted also that he had collected several variations of the song from different points of the Basque territory on both sides of the Pyrenees. He also says that the Basque text which he publishes does not follow any one copy, but is made up of a collation of these different copies. He was assisted in this work by a young Basque scholar, M. Dahalde.

From the first appearance of the song, controversy began about it. It was accepted by some as an almost contemporary account of the event which it describes, viz., the defeat of Charlemagne's rear-guard, the death of his nephew Roland, and the plunder of the baggage by the Vascons, or Basques, at Roncesvalles, or Roncevaux, A. D. 778. By others its authenticity was as strongly opposed, and the controversy has continued to the present day. It is only quite recently that the names

†Of course it ought to be "vultures." The Basque is distinctly "eagles;" an error which no Basque shepherd could have made.

of the real authors of the French song, and the Basque translation of it, have been given to the world.

Le Dictionnaire Universel des Contemporain, par G. Vaquereau, Paris, 1861, gives us the following information concerning M. Monglave: "Monglave (Francois-Eugene Garay, dit (called) de) * was born at Bayonne, March 5, 1796. He devoted himself to minor journalism, founded in 1823, *le Diable boiteux*, † a paper which he revived in 1832, and 1857, and kept up a continual attack on the Restoration. He was more than once imprisoned and heavily fined, and was obliged to hide himself under false names. In 1833 he founded "The Historical Institute," a society which was authorized by law in 1834, and of which he was elected perpetual secretary."

It is evident that this position of M. Monglave, as Secretary of the Historical Institute, gave him peculiar facilities for introducing anything he might wish to print in the journal of the institution, without being called upon to produce vouchers for its authenticity. He asserted that all the ballads of the Basques are full of the valiant exploits of the Peers. There is not a single Basque ballad on the subject. The memory of Charlemagne and of his Peers is indeed preserved among them, and their names are familiar to all in the district of "La Soule," Even in the "Basse Navarre," a Spanish Basque peasant whiled away a four hours' walk from Les Aldudes to Roncesvalles, by relating to me in Spanish the story of the defeat and death of Roland; but his story was that of the "Chauson de Roland, the great epic of northern France, and of the false "Chronicles of Turpin," not at all that of the "Chant d' Altabiscar. The story of Charlemagne is kept alive in the "La Soule." the most easterly of the three districts of the French Pays Basque, by the open-air dramas, pastorals or tragedies still performed there. Many of these take their subject from the old Carolingian legend. Such are the pastorals of "Charlemagne," "Roland," "Les douze Pairs de France," "Les quatre Fils Aymon," "Richard sans Peur, Duc de Normandie," etc., etc.; but the story of all these dramas is regularly taken from the little books hawked about France. "Les livres populaires des Colportage," is rudely printed on coarse paper, with still ruder wood-cuts, and sold at about 30 c. A full account of such books, including several which contain the subject-matter of the pastorals, will be found in the excellent "Historie des Livres Populairies, on de la Literature du Colportage, depuis le XV Siecle, par M. Charles Nisard; 2 vols.; Paris, 1854." It is from such books, and from the pastorals founded on them, and from no other source, that

* The prefix '*de*' is the sign of nobility in France; but is often assumed without strict right.

† "*The Devil on two sticks.*" A favorite name for satirical journalism in France, since the publication of Le Sage's novel, "Le Diable Boiteux," 1707.

the modern Basques have their knowledge of Charlemagne and of Roland.

I said that from the first appearance of the "Chant d'Altabiscar" its authenticity was contested. Among the better known writers on both sides are: Fauriel, who accepted it, and Du Mego, who denied it. Chahs, Cenac-Moncaut, Fr. Michel, Louis Laude, and others received it; but more exact scholars, like M. Barry, of Toulouse, Gaston Paris, J. F. Blade Lane, opposed it. The best critical dissertation on it is from the pen of M. Alexander Dihioux, a Basque, of Bayonne. This appeared in the columns of a local paper, "l'Impartial des Pyrenees," 10, 11, 22 September, 1873. These articles were reprinted by M. Julien Vinson, Professor of Indian Languages, in the school of Oriental Languages at Paris, first, in the "*Avenir de Bayonne*," 1, 3. 6 May, 1878, and afterwards in an interesting volume of "Melanges de Linguistique et d'Anthropologie, par Abel Hovelacque, Emile Picot and Julien Vinson;— Leroux, Paris, 1880." In Spain, and among the Spanish Basques, a warmer welcome has been given to it than in France; Lafuente, Amador de los Rios, Araquistain the editors of the *Revista Eushara*, and of the *Eushal-erria*, and Don Yose Manterola in his excellent collection, "El Cancioners Vasco," have all received it as authentic. It was first published in England in 1858, in the "Gentleman's Magazine," by M. Francisque Michel, the author of that charming book 'Le Pays Basque,' and the discoverer of "La Chauson de Roland;" but in the same magazine, in March, 1859, appeared a most important statement from M. Antoine d'Abbadie, a Basque on his father's side, a member of the Institute of France, renowned equally for his linguistic as for his mathematical attainment. He writes in January, 1859:

"I am sorry that the *Altabiscarraco Cantua*, mentioned in your same number, is acknowledged as a gem of *ancient* popular poetry. Truth compels me to deny that it is *universally* admitted as such, for one of my Basque neighbors has often named the person who, about twenty-four years ago, composed it in French, and the other person, who translated it into *modern* but indifferent Basque." In the next number, April, 1859, M. Fr. Michel writes: "Henceforth I will believe that the songs called *Abarcaren Cantua* and *Altabiscarraco Cantua* are forgeries." Notwithstanding this declaration, which I produced in the Appendix to the 2d edition of my "Basque Legends," 1879, the song continued to be received as genuine. A writer in the Saturday Review, August 17, 1878, appeals to it seriously as if it were a contemporary document with the fight at Roncesvalles, "the use of rocks is confirmed by the Basque ballad of Altabiscar, in which, however, there is no allusion to the powerful inducement of booty." As poetry it has received excessive praise. A writer in Blackwood's Magazine, November, 1881, puts it far

above "La Chauson de Roland," and says with disdain: "The critics assert that this noble chant is modern." But the chorus of admiration culminates in the "Discourses, (or Orations), read at the reception of Don Victor Balaguer, the distinguished poet, dramatist, and historian of Catalonia, to the Spanish Academy, February 25, 1883. He there styles it, "that famous song of Altabiscar, be it more or less ancient, a point which I do not now discuss, but which, whether more ancient or more modern, is a monument of glory more than sufficient to enrich a whole series of literary generations." p. 4. And again in the notes, in which he gives both the Basque text and a fine Spanish translation of it by Sr. Manterola, he writes of "its monumental and imperishable *Altabiskarco Cantua*, or Song of Altabiscar, on whose more or less remote antiquity the last word has not yet been said." p. 29.

On the publication of the above "Discursos," I wrote to M. d'Abbadie, the author of the letter in the Gentleman's Magazine referred to above, begging him to declare to the world the names of the true authors of the piece. In reply I received the following statement made by Capt. Duvoisin, one of the best-known Basque scholars, and the author of the translation of the Bible into Labourdin Basque for Prince L. L. Bonaparte.

"The young Basques, and especially the students at the universities, the law and medical students, who follow their studies in Paris, are fond of singing in parts, a song formed from the names of the numbers in Basque: one two three, up to twenty; then backwards, from twenty to one.*

"M. Garay de Monglave was a Bayonnais, and frequented the company of his fellow-countrymen. This song, this souvenir of his country, far from home, inspired him with the idea of the song of Altabiscar. He composed it in French. One of my cousins, M. Louis Duhalde, of Espelatte, who was then giving lessons in Paris to young students who wished to enter the E'cole Polytechnique, translated the work of M. de Monglave into Basque. Louis Duhalde had never made a study of his mother-tongue; he knew only what he had learnt of it as a child, and thus his translation shows an inexperienced hand. He translated it simply into prose, without metre and without rhyme; the pieces can be recited only; the numbers alone, one, two, three, etc., are sung, and that to a tune which has certainly nothing warlike about it. It is necessary to add that the pretended copies, with variations, preserved in the mountains, have never existed."

* In a letter which accompanied this declaration, M. d' Abbadie informs me that he has heard the numbers sung in eight syllable lines as a *zortzico* or dance tune, by a peasant, near St. Eterune de Baigorry. Another friend, who had once joined in the singing of them in Paris, and often at St. Jean de Luz, as a part song, sang them over to me. The air is very suitable for this purpose; but as Captain Duvoisin observes, "has nothing warlike about it."

"A simple reflection ought to have made people consider, that if a song can be preserved by oral tradition, a recitation which cannot be sung could not have a future. M. Duhalde himself has often laughed with me over the mistake of so many writers."

"The original of the above note is signed 'Duvoisin,' and accompanies a letter of the same Basque scholar, dated Ciboure, May 30, 1883, in which he authorizes me to make of his declaration any use I please. ANTOINE D' ABBADIE.

"PARIS, June 1, 1883." "(de l' Institute.)"

The authorship is thus known, and this ancient song is really only half a century old.

This declaration agrees exactly with the criticisms of M. Dihioux who pointed out that the author of the song was writing in *Basque* what he had thought in *French*, and remarked on the use of *childish Basque* diminutives in place of the language of a man. As to the Basque being in *prose*, even those editors who were most in favor of the antiquity of the song were never able to reduce the irregular lines to any known measure of Basque verse.

The history of this song seems to me to be very instructive, showing as it does, the little value of subjective criticism, except in the very best hands, especially if patriotic or other emotion is allowed to sway one's judgment in the slightest degree.

MONGOLIAN RUINS.

BY J. GILMAN.

Ruins in Mongolia would be a more correct expression, for the Mongols have hardly anything that could go to ruin. A tribe of Mongols who inhabited any district, on abandoning their locality would leave few traces of their occupancy. Immediately after their going, there would be scraps of felt, rags of skin clothes, and cotton clothes, odds and ends of tent wood, mouldered fuel, circles of cattle pens at first barren then luxuriant, a heap or two of ashes, and a well.

Twenty years later there might be a remnant of ashes and a slight depression where the well had been, and a few years to that again and it is questionable if even the filled up well would be discernable. The only impression that a Mongol ever makes on a lanndscape, the only impression that has anything lasting about it is the horse enclosure, a circular earthen wall which is sometimes thrown up to confine horses at night.

Whence then come the ruins in Mongolia? The Mongols themselves have little or no explanation to offer concerning them. There seems to be a sort of general tradition that once upon a time the Chinese occupied a large tract of Mongolia, extending,

according to some versions of the tradition, as far north as Urga, and that they were at last driven out of Mongolia by a victorious Mongol leader who swept the land clear of the detested and despised Chinaman. At the present day the same despised Chinaman is slowly working his way up north, gradually displacing the sparse tents and the flocks and herds of the Mongols, by fields of grain waving around numerous and comfortable looking homesteads. The Mongol, as he shifts back his tent farther into the desert, heaves a sigh for his departed glory and nourishes in his heart a prophecy said to exist, that in the future there shall arise another great Mongol leader who will again sweep the land clear of the intruder with the battle cry of Mongolia for the Mongol.

The ruins are principally of two kinds—cities and mills.

The Cities are very numerous. Almost anywhere within eighty or a hundred miles of the present Chinese frontier, these cities may be met with. All that is now left of them are the mud walls crumbled and smoothed off into mounds, grass grown, and seemingly nearly as durable as the natural features of the country themselves. Some few of these walls having more perpendicular parts left, betoken an antiquity of no great age, but most of them are crumbled down to an angle of durability that seemingly would be little affected by two or three hundreds of years. If it is true that earth mounds are the most durable monuments that human industry can raise, some of these cities may be of a very ancient date indeed.

In some few of these cities may be found a few bricks, a few pieces of tile, or a block or two of marble, and near the entrance of one city, till a year or two ago, might be seen standing a perpendicular stone, which probably stood as it had been placed by the same hands that raised the walls that are now represented by crumbled mounds. It is probable that Chinese literature gives an account of the population who built and inhabited those cities, but in the localities where those cities stood, and among the present inhabitants of the place who tend their flocks there, and ride up of an evening on to these mounds to see if their cattle are coming home, no tradition even of the people seems to be left. "Their memory and their name is gone." The ruins of the cities are not at all strange. They are just what might be expected, perhaps what would be found some hundreds of years hence in a Chinese district if the inhabitants were driven out and their country made into a sheep walk to-morrow. But the mills are curious. They are in various degrees of preservation. Of some there are only traces left. Some are preserved better, nearly half being left. Some again are perfect and entire. They consist of two parts — a circular groove and a great round stone with a hole in the centre. It is quite evident that the circular stone ran on its edge in the groove. The stone is about six feet in diameter and a foot, more or less, thick; while the

groove describes a circle of about twenty-six feet in diameter. The groove is very shallow, being only about seven or eigh inches deep. These mills are numerous in Mongolia. The groove stones may be found put to a variety of uses by the present Mongol. Are *stepping stones* wanted for crossing a stream, these old groove stones are hunted up and brought into use; is a big stone wanted for almost any purpose, an old groove stone is most likely to be the first one that offers; does it happen to be necessary to make a run for the water from the well to the watering trough, old groove stones are placed with the curve reversed in alternate stones, the joints made water-tight with a packing of old felt, and there is a conduit, winding a little it is true, but more durable than the wooden trough itself; and in not a few cases poorer Mongols do without a trough at all, and water their few cattle from a run of these same groove stones placed end to end and joined as described above with felt.

It is only in the less inhabited districts where no one wanted to use the stones that these rude mills can be seen entire. The question arises what were they meant to grind? It could hardly be grain. For grinding grain the stone wheel seems superfluously heavy and the immense diameter of the groove inconveniently large. What else could it be that these bye-gone people wanted so badly to grind that they had to set up their cumbersome mills everywhere? Whatever it was that they wanted to grind, what persuaded them to give that mill so great a circumference, as about eighty feet? Would not a smaller circumference have done equally as well? Are there any such mills used for anything at the present day. Or were these rude mills used by a semi-barbarous or half instructed people who did not know enough to make more convenient mills?

These old cities, these old mills call up sad thoughts in the breast of the traveler in his lonely journey over the plain. They point to the fact that the land that is now desolate, destitute in many parts of cattle even, was once well peopled. Some ruthless force must have violently set back the hand of progress. It is impossible to sympathize with the Mongols who rejoice in their land reclaimed from the possession of the invader, and as the traveler sees his silent string of camels winding along a road, in which with shuffling feet they tread on the now worn level foundations of the walls of houses, it is impossible not to think how much more attractive the landscape would look if thickly inhabited, even by a people who knew no better than to set up mills twenty odd feet in diameter.

WHO WERE THE MOUND BUILDERS?*

BY CYRUS THOMAS.

It is not my intention to attempt a review of this important work in this article, the chief object I have in view being to call attention to the position taken in it on the question "Who were the mound-builders?" and to present a few additional reasons for believing that the position, which holds that the mounds were built by Indians, is correct.

As indicating the diversity of opinion on this topic, we note the fact that simultaneously with the appearance of Professor Carr's work, which is literally crowded with evidence in support of the position he takes, a paper is read before the Scientific Association, at Minneapolis, which carries back the mound-building age to the "Champlain era," or geologic period when the western plains were yet mostly lakes, when the loess bluffs were being heaped up, and the older river terraces were being formed.

"*Who were the mound-builders?*" We answer unhesitatingly, Indians — the ancestors of some, perhaps of several of the tribes of modern or historic times.

In discussing this question, we start out with two admitted facts: *First*, That when the country was discovered by Europeans, it was inhabited by Indians only, of whose previous history we know nothing except what is gleaned from vague and uncertain traditions. *Second*, That we have no historical or other evidence, unless it be derived from the antiquities themselves, that any other race or people than the Indians ever occupied this region previous to its discovery at the close of the fifteenth century.

We enter the discussion, therefore, with at least a presumption in favor of the theory that these works were built by Indians. A presumption that must be overcome with some evidence to the contrary. A presumption that renders every fact which indicates similarity between the Mound-builders and Indians in arts, customs, religion, modes of life, etc., an argument in support of this theory.

That the people who left behind them these monuments were to a certain degree sedentary, sustaining existence, chiefly, in part at least, by agriculture, must be conceded; that they had some kind of organization and government by means of which, force could be aggregated and controlled to a sufficient extent to build these works must be admitted, and that they had made sufficient advance in the simpler arts to produce the implements, vessels and ornaments found in them (except such as are manifestly of

*"*The Mounds of the Mississippi Valley Historically Considered.*" By Lucien Carr. (1883.)

foreign origin) is evident. But does it follow as a necessary inference from these admissions, that they were not Indians? We think not.

I cannot help wondering, as does Prof. Carr, why it is that so many intelligent writers, when discussing this question, have ignored the well known historical fact, that nearly all of the Indian tribes east of the Mississippi and some residing west of it, when first encountered by Europeans were cultivators of the soil and sedentary. Even so well informed and cautious a writer as Foster remarks:* "A broad chasm is to be spanned before we can link the mound-builders to the North American Indians. They are essentially different in their form of government, their habits and their daily pursuits. The latter, since known to the white man, has spurned the restraints of sedentary life which attach to agriculture and whose requirements in his view are ignoble."

Although having barbarous customs and indulging in many cruel practices from the earliest notices we have of them — a fact equally true of the civilized races of Mexico and Central America — yet when first visited there was scarcely a tribe from the Gulf of Mexico to the Lakes, and from the Atlantic to the borders of the western plains but had its fixed seat, its local habitation, and subsisted to a large extent upon the products of agriculture.

De Soto, in his entire march from Florida to the western part of Arkansas did not, as we judge from three narratives of his expedition, procure wild game sufficient to have lasted his party a single week, yet he traveled through this region for two years with an army, at first, of one thousand men and three hundred and fifty horses. Their chief and often only food was maize taken from the natives.

The early voyagers along the Atlantic shore observed fields of this plant at almost every point where they landed. We have only to look in DeBry to see that the Indians of this section depended very largely upon agriculture for subsistence. John Smith and his colony depended for the preservation of their lives very largely on this fact. Jacques Cartier found the inhabitants of old Hochelaga, cultivating maize; La Salle found the same thing true in Illinois. But it is unnecessary for me to introduce any evidence on this point as Prof. Carr has so fully covered the ground in his "Section I," as to leave no one an excuse for making a blunder on this point hereafter. The wonder is how any intelligent writer with such an abundance of testimony in his reach, should have gone astray in this respect.

The early history of our country from the time of Cabeza de Vaca's strange journey across the continent to the time of the removal of the tribes to the west side of the Mississippi, is full

* Prehistoric Races, p. 347.

of evidence that the various tribes had fixed seats and determined boundaries to their several territories so that they knew when they were trespassing on each other's possessions. We find it in the narratives of De Soto's expedition, in the discussions of the numerous treaties made with each other and with the whites. We find it alluded to even in poetry, fiction and painting.

It is true that war parties were constantly wandering over the country, but this is not necessarily inconsistent with the idea of fixed homes and permanent dwelling places.

We can not present in a single article the abundant proofs to be found on this point, but take for granted that it will be admitted by the careful reader of our early history; we also refer the reader to Prof. Carr's work where much testimony relating to this subject is given.

The term "Mound-builders," though adopted from necessity, has proven a stumbling block in the way of progress in the study of our prehistoric remains, as it has come into such universal use as to lead many, in fact, most writers who have directed attention to the subject, to speak of them and in fact to consider them as *one people.*

We quote again from Dr. Foster, who may be taken as a representative of this class. * Speaking of the ancient works, he says: "While the character of these structures, as traced over wide areas, differs in minor particulars, still there is a general uniformity which stamps the authors as *one people and subjects of one controlling government.*" Yet, as everyone knows, who has studied these works with any care, the only similarity between the extremes in form and construction is the fact that they are built of earth. The effigy mounds of Wisconsin, the ordinary conical tumuli found in all parts of the country, the pyramidal and terraced mounds of the southern states, and the enclosures of Ohio, differ so widely in every respect except that they are built of earth, that to speak of them as "presenting a general uniformity" is erroneous and misleading. Between the extremes of forms and modes of construction presented in these works, we may insert most of the mounds of Europe, Asia and the rest of the world.

In addition to this fact the ancient works of our country, as we are now able to demonstrate, were erected for widely different purposes. Some of them, as most of the truncated, pyramidal, and terraced mounds of the south, are sites for temples, council-houses and residences; while a larger portion in the northern and central regions were intended solely as depositaries for the dead. The enclosures of Ohio and elsewhere were probably intended chiefly, or in part at least, for defense and security,

*Prehistoric Races, p. 79.

while the small earthern rings in Tennessee and Southern Missouri mark the locations of houses or wigwams.

The unfortunate term "sacred enclosures," adopted by Squier and Davis, has been so generally accepted as indicative of the purpose for which a certain class of these works were erected, that it is looked upon as little short of heresy to doubt its propriety. Yet there is not a particle of proof to justify it; on the contrary all the facts ascertained indicate that they are the remains of fortifications or works of defense and security.

Judging by all the data so far obtained relating to the form, internal structure and contents of these works, much of which has not yet been published, we perhaps are warranted in concluding that the following districts or areas were occupied by different peoples or tribes. As a matter of course we can only designate these areas in general terms.

First. The Wisconsin district, or region of the emblematic or effigy mounds.

Second. The Illinois or upper Mississippi district, embracing eastern Iowa, northwestern Missouri, and northern and central Illinois as far south as the mouth of the Illinois river. In this region the works are simple conical tumuli of small or moderate size, found on the uplands and ridges as well as on the bottoms, and were evidently intended chiefly as depositaries for the dead. They are further characterized by internal rude stone or wooden structures or layers; by the scarcity of pottery vessels; the frequent occurrence of pipes, the presence of copper axes, etc. Enclosures and walls are of rare occurrence in this region. The skeletons found are usually extended and often covered or even encased in a hardened, mortar-like substance.

Third. The middle area or Tennessee district, including southeast Missouri, northeast Arkansas, west and middle Tennessee, southern and western Kentucky and southern Illinois. This is pre-eminently the pottery region, the typical form being the gourd shaped vase. But this region is closely allied to, and appears to be, in fact, but a subdivision of the great southern district, and like it is distinguished from the northern sections by its larger mounds, many of which are pyramidal and truncated and often terraced, and which were beyond question, used as domiciliary mounds, and by the fact that they are mostly on the bottoms or level lands. Here we meet with repeated examples of enclosures, though essentially distinct from those of Ohio; also ditches and canals.

From the Gulf district with which, as we have said, this is closely allied, it is distinguished chiefly, by the presence of stone graves or cists, by the small circular house sites, and the differences in the pottery. In this district the carved stone pipes are much less common than in the northern, Ohio and Appalachian regions; it is here also that most of the image vessels of

pottery are found. Its works also furnish strong indications of at least two waves of population.

Fourth. The Gulf district, including the southern half of Arkansas and all of the Gulf States. The distinguishing features here are the flat-topped, pyramidal mounds; systems of large ditches and canals; terraced mounds and the frequent occurrence of burnt clay—which had evidently formed the plastering of houses—in the mounds. The pottery of this region is also of superior quality, and generally more highly ornamented than that of the other sections; but the form and ornamentation of this ware, as well as the mounds themselves, as we enter the confines of Florida, indicate another subdivision of this great area.

Fifth. The Ohio district which, although presenting several features in common with the southern sections, is distinguished by its great circular and square enclosures, the long parallel lines of earthen walls, the so-called "altar mounds," the numerous pipes found in the mounds, the character of the pottery, etc.

Sixth. The Appalachian district, including western North Carolina, east Tennessee, and presumably southwestern Virginia, and eastern and central Kentucky. The characteristics which appear to distinguish this from most of the other districts seem to ally it to that of Ohio. These are the the numerous stone pipes, the altar-like structures found in some of the mounds, the use of mica plates in burial, etc. But the peculiar features are the mode of burial, the absence of pottery, the numerous polished celts found in the mounds, engraved shells, etc.

The remains in Kentucky present several peculiarities which appear to be intermediate between those of this region and those of Ohio, but the data so far obtained are not sufficient to enable us to decide the point with certainty.

Seventh. The New York district where the remains are now considered to be of Indian origin.

There are also localities where there are indisputable evidences that one wave of population has been succeeded by another differing radically from the first in habits, arts, modes of burial and other respects. A very marked instance of this kind was discovered last year in northeast Iowa.

Taking all these facts into consideration, we are certainly justified in concluding that the mound-builders belonged to several distinct tribes, as widely separated in their ethnic relations as the Indian tribes found inhabiting the country at the time of its discovery by the Europeans.

The geographical distribution of these ancient works alone ought, as it seems to me, to lead to the same conclusion. It is scarcely possible that there could have been a nation of pre-Columbian times, without beasts of burden or domestic animals; not yet sufficiently advanced in the arts to build houses of brick or

stone, and evidently not above the Pueblo tribes in their culture status, yet with a central controlling power, governing villages and communities so widely separated as Wisconsin and Florida, New York and Louisiana. Even if we make due allowance for all the changes and migrations which occurred during the mound-building period, and for the differences in the ages of the works it will not do away with this difficulty. We are therefore forced to the conclusion that the Mound-builders belonged to several different tribes or nations, which furnishes one strong argument in favor of the theory that they were Indians.

THE HOUSES OF THE MOUND-BUILDERS.

Up to the present time not a single house coeval with and bearing evident relation to these ancient works has been found. Though hundreds of groups of mounds, marking the sites of their villages, are to be seen scattered over the country, yet in none of all the number is there a single dwelling remaining. The inference is therefore irresistible that their houses were built of perishable materials; that they were not sufficiently advanced in art to make use of stone or brick in building. So far, at least, the Mound-builders and Indians were alike. But this is not all that we can say in reference to their buildings. Although no examples of their houses remain, we are not left wholly in the dark in regard to them.

In various localities, especially in middle and west Tennessee, southern Illinois and southeastern Missouri, the sites of thousands of them are yet distinctly marked by little circular, saucer-shaped depressions from twenty to fifty feet in diameter, each surrounded by a slightly raised earthen ring. By digging in the centre from one to three feet deep, we almost invariably find the ashes and hearth which mark the place where the fire was built. and often unearth fragments of vessels used in cooking, and the bones of animals whose flesh was used as food. As the fire-place is invariably in the center and there is nothing found to indicate the use of a flue or chimney, we conclude there must have been an opening in the top of the dwelling or wigwam for the escape of smoke, and that the form of the house was conical or dome-shaped. The ring of earth has doubtless been formed by the decay of the bark or other covering, and by the earth thrown around and against the base to keep out the water and to shield from the wind and cold in winter.

We have in these remains evidences of customs and modes of life so strongly resembling those of some of the Indian tribes that no one can fail to note it. The circular form, the size, the central fire, the want of regularity in placing them, and the perishable materials of which they were made, are all indications pointing to one conclusion.

But our testimony in regard to the dwellings of the Mound

builders is not yet exhausted, meager as it has generally been supposed to be.

During the explorations carried on by the Bureau of Ethnology the past two years in southeast Missouri, Arkansas and Mississippi, especially in Arkansas, in hundreds of instances beds of hard burned clay containing impressions of grass and cane were observed. These were generally found one or two feet below the surface of low flat mounds, from one to two feet high, though by no means confined to these, as they were also observed near the surface of the large flat-topped and conical mounds. So common were these and so evidently the remains of houses that the explorers generally speak of them in their reports as "house sites."

As a general rule the strata occur in this order: first a top layer of soil from one to two feet thick, then a layer of burnt clay from four inches to a foot thick (usually from four to eight inches), and always broken into lumps — never in a uniform, unbroken bed — below this a layer of ashes and charcoal in which are usually found fragments of pottery and occasionally whole vessels, stone chips, broken bones of animals, and other refuse; immediately below this sometimes a layer of hardened muck or dark clay; at this depth — in the mounds of the eastern part of Arkansas — is usually found one and sometimes two skeletons, though seldom if ever charred. In two instances the charred remains of the poles of which the houses were built were found, and parts of two of the upright poles were discovered, still erect, in a large mound to which an addition had been made. In a few instances the lines of the upright plastered walls were distinctly marked by the yet remaining base, and the burnt clay which had fallen down in a ridge instead of over in a sheet as is usually the case. As evidence that the clay plastering had often fallen over in a sheet, it was observed that the smooth side in some cases was down and the rough side up. In several cases this plastering had been stamped with an implement probably made of split cane of large size. Although these houses were in most instances circular, the remains of those of a square or rectangular form were also found.

The reader will probably remember the description given by Prof. Swallow of a room formed of poles, lathed with split cane, plastered with clay, both inside and out, forming a solid mass, which he found in a mound in southeastern Missouri*

The plastering, he informs us, was left rough on the outside but smooth on the inside, and some of it was burned as red and hard as a brick; while other parts were only sun-dried. Some of the rafters and cane laths were found decayed, some burnt to coal, and others rotted but the bark. The inner plastering was found *flat on the floor of the room as it had fallen in, and un-*

*Eighth report Peabody. Museum, p. 7.

der il were the bones and pots. The statement made by Prof. Swallow that this plastering was sometimes painted has also been confirmed by the explorations under the Bureau of Ethnology.

It is evident from these facts that these are the remains of the mound-builders' houses, which were constructed of poles, lathed with split cane and plastered with heavy coats of stiff clay, precisely as were the houses of the Indians of that southern region in the early days of the French settlements. Although numerous authorities might be cited in proof of this statement I will refer to but two.

Father Gravier,* speaking of the Tounicas, says: "Their cabins are round and vaulted. They are lathed with cane and plastered with mud from bottom to top, within and without, with a good covering of straw." In one instance, in southern Arkansas, the charred remains of this straw covering was found buried under the fallen plastering.

Henri de Tonti† says the cabins of the Tensas were square, with the roof dome-shaped, and that the walls were plastered with mud to the height of twelve feet, and two feet thick.

These facts, taken together with the historical evidence given by Professor Carr, appear to me so conclusive as to leave no possible room to doubt that the Indians were the builders of the mounds of that section, some of which are exceeded in dimensions only by the great Cahokia mound in Illinois, and possibly the largest of the Etowah group, near Cartersville, Georgia.

The largest of the Knapp group, near Little Rock, is nearly one hundred feet high. On the top of the second in size of this group (about sixty feet high and flat on top) several of these beds of burnt clay were found by the Bureau assistants.

If we could trace De Soto's route minutely, and with absolute certainty, we would be able, no doubt, to identify, so far as they remain, the mounds and other works of which the chroniclers of his expedition speak; but unfortunately this cannot be done. Still there are some parts of it that can be determined within reasonable limits. For example, scarcely a doubt remains that he passed through the northern part of Georgia, striking the head-waters of the Coosa river. The proof on this point, which I cannot stop to give, is so conclusive that we are fully warranted in assuming it to be a fact.

Now, it so happens, that while in this region, he stopped at an Indian town (*Guaxule*) where the house of the Cacique was situated on a mound which must have been of unusually large size, as it is spoken of as "high." This, I am inclined to believe, was the largest of the celebrated Etowah group near Car-

* Shea's "Early French Voyages on the Mississippi," p. 135.

† "Historical Collection of Louisiana," I, p. 61.

tersville. I am aware that Dr. C. C. Jones, our best authority on this subject, locates *Guaxule* in the southeast corner of Murray county, but in this instance I think he is evidently in error.

Garcilasso, who is our authority in this case, says:* "La casa estava en un cerro alto, como de otras semejentes hemas dicho. Tenio toda ella al derredor un pascadero, que podian pasearse por el seis hombres juntos."

"The house was on a high hill (mound) similar to others we have already mentioned. It had all around about it a roadway on which six men might march abreast."

This description is peculiar, and so far as I am aware,—and I have taken some pains to ascertain —can apply only to the large mound near Cartersville. The words "similar to others we have already mentioned," make it evident beyond a doubt that the "hill" was an artificial one, and that the writer intends to convey this idea, and so far as I am aware, this is conceded. The "alto," (high) in the mouths of the explorers, who were Garcilasso's informants, indicates something more elevated than the ordinary mounds. But the "broad way (pascadero) all around it," is the peculiar feature mentioned, which, if the work remains, ought to enable us to identify it.

As Garcilasso wrote from information and not from personal observation, he often failed to catch from his informants a correct notion of the things described to him; this is frequently apparent in his work, even where there is no reason to believe he is embellishing from his vivid imagination. In this case it is clear that he understood there was a terrace running entirely around the mound, or a roadway around the top outside of a rampart or stockade. Neither of these conclusions could have been correct as no such terrace has been found to any mound in or near that part of Georgia. Mounds with terraces are by no means rare, but those with terraces running *entirely around them* are of exceedingly rare occurrence in the United States, in fact, I doubt, if we omit a few cases of mounds on platforms in Mississippi and Arkansas, if such an one can be mentioned; at least not one of the kind has been found in or near Northern Georgia.† A walk around the summit would be an anomaly, and would have thwarted the very design the Indians had in view in building these large domiciliary mounds.

Examining the largest mound of the Etowah group we find as I believe, a satisfactory explanation of this statement of the Inca who failed to catch exactly the idea his informants intended to convey.

"A roadway (pascadero) on which six men could walk abreast," is evidently intended to convey the idea that it was

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*Hist. Fla. edition, 1723, lib. III. cap xx., p. 139.

†I speak not only of what has been published but of special investigations recently made.

used as such and not as a terrace as Jones supposes, and hence for the purpose of *ascending* the mound.

The road way winding around and up the southern side of this large mound appears to me, (I speak from personal inspection), to answer precisely the idea intended to be conveyed, which can not be truly affirmed so far as I can ascertain of any other mound near this part of De Soto's route. This roadway does not, and certainly never did, as the descriptions of it seem to imply, reach to the top of the mound by some twelve or fifteen feet. The rest of the ascent was probably made by steps or possibly by ladders which could be drawn up in case of an attack by an enemy. The mound is large and high and quite steep, presenting an imposing appearance that would doubtless attract the attention of the Spanish soldiers. The level top contains an area of about one acre. The tribe by which the group was built must have been strong in numbers and probably could easily send forth 500 warriors to greet the Adalantado. As Garcilasso must have learned of this mound from his informants, and has described it according to the impression conveyed to his mind, we are justified in accepting his statement as a fact.

I am therefore satisfied the work alluded to is none other than the large mound near Cartersville, Georgia, and that here we can point to the spot where the unfortunate Adalantado rested his weary limbs and where the ambassadors of the noted Cacica of Cutifachiqui delivered their final message. If I am correct in conclusion we have just grounds for attributing the next to the largest mound in the United States to the Indians.

Prof. Carr, in the tenth report to the Peabody Museum and the work mentioned at the head of this article, quotes authorities tending to show that the Cherokees were formerly in the habit of erecting mounds, and gives several reasons in the former for believing that some at least of the mounds of East Tennessee were thrown up by them. My space will not permit me to discuss this opinion, but I certainly agree with him. The explorations recently made in this section and in Western North Carolina by the assistants of the Bureau of ethnology under my charge have brought to light sufficient data on this point, as I believe, to confirm beyond reasonable question this supposition.

As I can not allude to all of the numerous facts which indicate that the mounds are to be attributed to the Indians in a single article, I will close by adding that there are a number of valid reasons for believing that the stone graves (the box-shaped ones made of stone slabs) are to be attributed chiefly to the Shawnees.

CORRESPONDENCE.

ANCIENT HEARTHS.

In 1838, Col. C. Whittlesey, in making an examination of the fluviatile deposits on the Ohio river, at Portsmouth, saw in two places, the remains of very ancient fires. These remains were covered by gravel, sand and clay to a depth of fifteen feet.*

The above is, as far as I am advised, the earliest reference to these interesting vestiges. Since then, however, similar discoveries have been made in other parts of the Ohio valley, several of which are noticed in the geological reports of Indiana.

One of these hearths was discovered recently on lands belonging to Mr. Isaac Lesher, one-half mile south of Alexandersville, and about one mile east of the Great Miami river.

With a view of conveying a clearer conception as to the situation of these interesting evidences of primitive man, I will present a brief description of the geological surroundings.

This terrace which is about three miles in length, and one and one-half in breadth, is characterized by a yellow, sandy soil, under which we find yellow clay several feet in depth, which reposes on the drift or gravel. The above is the rule, but an exception occurs at the southern extremity of the terrace, which is characterized by a belt of black soil, extending from the river to the eastern boundary of the terrace, a length of two miles, with an average width of a half mile. This formation — which still serves as a flood plain for the accumulated waters from the adjacent hills — presents features singularly analogous to the filled-up glacial channels of southern Ohio. The hearth was discovered in this black belt, situated 205 yards from the base of the hills, from which point they recede southward, resulting in a prolongation of the terrace, and merging into a deep and narrow valley, which serves as an outlet for the accumulated waters of an extensive contiguous area. As the fall is very considerable, the periodical torrents rush forward with resistless impetuosity, annually increasing the width and depth of the channel, and finally exposed the long-buried remains.

In company with Mr. Lesher I visited this locality a few weeks ago, and by his efficient co-operation made a thorough exploration of it. The hearth was situated near the base of the bank which, at this point, is six feet and three inches in height, and presents a clear vertical section which consists of black surface soil about two feet deep, gradually blending into a brown deposit three feet deep, apparently of the same constituent prin-

* Foster's Prehistoric Races of the United States.

ciples. This reposes on yellow clay, from which it is distinguished by a sharply marked outline. On this clay, which extends to the gravel four feet below the bottom of the channel, the hearth was situated. The following are its distinguishing features:

It consists of a black mass of soil (which is susceptible of almost infinite subdivision into angular particles), charcoal, and small granules of a bright brown color. Over the entire surface was spead a layer of small fossiliferous limestones burned to a red color and exceedingly friable.

The hearth was one foot deep in the center, thinning out to the margin, and covered an area four feet in diameter. Depth of the overlying mass five feet three inches. There was no disturbance of the superimposed materials. Moreover, a large extent of the south and west walls of a square enclosure (part of the Alexandersville group) is located on this formation.

Although we may not claim for these vestiges an antiquity coeval with those discovered and described by Col. Whittlesey, yet the testimony is clear as to the occupancy of this valley before it assumed its present outlines, and of course anterior to the event of the mound builders. One of these hearths was discovered some years ago in the village of Sunsbury, fourteen miles southwest of Dayton, in the valley of Big Twin, at a depth of nine feet, in transported gravel. It was situated near the base of an immense diluvial bluff.

These hearths, as far as I know, present no evidence of surface accumulations, and those heretofore discovered on or near the surface, present the same peculiar features.

ALEXANDERSVILLE, O., 1883. S. H. BINKLEY.

THE MOQUIS INDIANS.

DR. YARROW:

Sir— In compliance with your request that I tell you some thing of the Moquis Indians, of Arizona, or rather something of my observations while I was in their country for the last eighteen months, I would offer the following:

To begin, I found them a very peculiar people, in many respects differing from any other branch of human nature with which I have ever been in contact.

As a general rule they are small of stature, symmetrical in form, in features regular with a common comeliness of face, and pleasant expression of countenance; some of whom, both male and female, are regular beauties, as if chiseled by the best masters, but with all an evident decline in physical and mental powers, in a word, the remnant of a once powerful race or division of humanity, from whence they come, still presenting some evidences of a superior civilization.

I will mention some of their habits and customs. They invariably live in Pueblos or houses during winter and the cold days of fall and spring. Their houses are of the usual form, and their places of ingress and egress formerly was through the roof, approached by ladders, and at nightfall, when the family was safely in, the ladders were drawn up so that curious or malicious neighbors could not so easily invade the sanctity of their homes, as is sometimes done in more enlightened communities. Recently, however, they have adopted the style of having doors in the walls, which is more convenient. The rooms are small, and generally kept clean and comfortable for themselves; dirt floors, covered in many instances with sheep-skins, especially when white men visit in the best families.

I found them quite hospitable, and much pleased with my visits to their families. They live strictly in families. The husband and wife provide and care for their own offspring, and are very domestic, loving their children tenderly. Their notions of the marital relations between husband and wife are not as good as they should be, as they are often broken up, frequently from merely the incompatibility of tempers, the only cause of separation.

The men are remarkable for their gallantry in not requiring their women to labor in their fields during cropping time. True some of them volunteer to work some when the crop is to be taken in and housed for the winter supply; and in many other ways the women are kindly treated by the men.

They are in a general way temperate, industrious, frugal and almost covetous, but detest their thievery amongst themselves.

The women own the houses, the sheep, goats, chickens, pigs, and the dogs, all the crops raised as soon as gathered and stored for family use, in fact they own and control nearly all the family possess, except the horses, which are mostly owned by the men, although the women may, and often do, acquire property in them.

They have a civilization peculiarly Moqui which we magnanimously denominate half civilized,— which is all of that.

In religion we say they are Pagan. They worship the sun. They say their religion is the truth, that in the center of the sun dwells the Great Father, the *one* great spirit, who gave to them all the good they ever had, and have, and from whom will come all they hope for in the future — that his blessings are conveyed to them by the rays of the sun's light and heat, and no limit to the amount of talk, it seems, can change that belief. Though they are willing to join any church that will supply them with flour, sugar, coffee and tobacco, they do that for the sake of accommodation, that is all.

Who are they, and where did they come from, is said to be the mystery. Well, this much we may consider settled, they

are one branch of the human family — the next proposition is not so easily solved. Where did they come from? that is the question. From my stay in their country of over eighteen months, and putting all my observations together, I have arrived at the opinion that they are allied to the Egyptian family of men, and are the fag end of the numerous and powerful people, who overrun this continent at one time.

Their ruins are found in many localities throughout the country, in the shape of mounds, cliff houses, the implements of husbandry, domestic utensils, stone and copper axes and pottery, and the implements of war, in the shape of battle-axes, bows, and quivers filled with arrows. The story in the Jewish system of religion of the temptation of the woman by the serpent, they have incorporated in their system in a peculiar form, which is at this day commemorated in their great rattle-snake dance, with the desire to appease the serpent. This dance I witnessed last August, in the village of Walpi. I believe they are the descendants of the mound-builders and cliff-dwellers of long gone years. All these things, with other matters of observation, such as their politeness, and frequent fine touches of refinement which I could see, but cannot describe in the space allotted to this letter, so as to be appreciated, but are sufficient to impress my mind of their alliance to the ancient Egyptians, once the most enlightened division of the human race of whom anything definite is known. The great question, I think, is to determine in what locality, or in what country did the human family originate. Settle that, and then can soon be settled the question, whether the Egyptians were Moquis from North America, or the Moquis were Egyptians from the banks of the river Nile.

The foregoing are some of my observations of these people. I know I have but crude ideas on the subject, and badly jumbled up, and the ideas, perhaps, peculiarly my own, drawn from what I saw and learned of them, but satisfactory until I learn something better. I am, very respectfully,

JOHN H. SULLIVAN.*

WASHINGTON, D. C., April 10, 1882.

MANNER OF PRESERVING MOUND BUILDERS' RELICS.

Editor American Antiquarian:

DEAR SIR—The former letter written in answer to your communication to Prof. Baird was a true statement of facts in regard to the mound explorations so far as they relate to the point made by you.

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*The above letter was forwarded to the editor of the AMERICAN ANTIQUARIAN by direction of Major J. W. Powell, of the Ethnological Bureau, and is published without note or comment.

In answer to your inquiries in your letter of January 8, 1884 just received, I would state:

First. That our field assistants are required to make notes, at the time the specimens are collected, of the precise locality where they are found, whether in graves, in mounds, surface finds or donated, and to carefully number them and transmit catalogues with each shipment in which these facts are given opposite the respective numbers.

Second. As soon as received the specimens are catalogued with the Smithsonian numbers and the original field numbers, so that by reference to the catalogue at any time the precise locality where the specimens were found may be known; and when the report of operations is published, the form, character, and particulars of the mounds as also of the topography where they were obtained will be known.

Although most of the specimens will, I presume, go into the general collection, special care has been taken to have them so carefully marked and numbered that by reference to the catalogue any specimen referred to can be picked out and the precise locality in which and circumstances under which it was found ascertained. The specimens we collect are kept well in hand until this accuracy is assured, and duplicate catalogues made so that antiquarians can rely implicitly on what is stated in regard to them.

The filed catalogues, as a matter of course, will not be published, but will, I presume, be subject to inspection by those desiring to ascertain the history of any given specimen, or by referring to the secretary of the Smithsonian institution, this information can be obtained. A general catalogue (well illustrated) of the collections of the past year has been prepared and will be published by the Bureau of Ethnology.

A few of the more remarkable mound collections have been kept separate, those from each mound together, and I understand it is Prof. Baird's intention to keep them so. These include the engraved shells, stone pipes, iron specimens found in certain North Carolina mounds.

So you see, every possible precaution to insure the identity and preserve the correct history of the collections made by the Bureau has been taken.

Let me add further that our assistants are paid for the time they are employed, and not according to the collections made, and that I have endeavored to impress upon them that one chief object the bureau has in view is to ascertain all the facts possible in regard to the mounds and other ancient monuments of our country. This, in fact, is one of the chief points Major Powell, who has charge of the Bureau of Ethnology, has kept continually in view in these explorations.

In order to make plain the statement in my letter I give the following illustration. Turning to the copy of the field catalogue to which the Museum numbers have been added, I take the following ten entries just as they are found there:

Original No.	Museum No.	Names of Articles.	Locality.	Collector.	Remarks.
34	71,517	1 copper camp kettle	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
36	71,518	3 copper bracelets	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
32	71,519	1 flint knife	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,520	1 silver locket and 1 silver ornament	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,521	4 large, 3 small, and 5 (pieces of) silver bracelets	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,522	4 large, 6 small, and 8 (fragments of) silver brooches	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,523	1 Pair silver ear-rings	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,524	1 silver ring	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,525	1 double silver cross	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).
37	71,526	1 knife handle	Prairie du Chien, Wis.	P. W. Norris	Mound, (intrusive burial).

Turning now to the report, we find after the description of the locality, group, etc., the following:

"One large mound, seventy feet in diameter and ten feet high, was still unexplored. This I opened. It had been considerably defaced, especially on the west side. According to tradition, it was a noted burial place with the Indians, which was certainly confirmed by the result."

"The surface or top layer was composed of sand and soil to the depth of some three or four feet. Scattered through this in almost every part of the mound, were found human skeletons in various stages of decay, and in different positions, but mostly stretched horizontally on the back. Scattered among these remains were found numerous fragments of blankets and clothing, but too much decayed to preserve any specimens; human hair, one copper kettle, three copper bracelets, one silver locket, ten silver bracelets — one having the word "Montreal" stamped on it, and another the letters "A. B.;" two silver ear-rings, ten or twelve silver brooches; one copper (or silver) finger-ring, one double silver cross, one knife-handle and one battered bullet. In fact, the top layer, to the depth of three or four feet, seemed to be packed as full of skeletons as possible without doubling them, and even that had been resorted to in some places."

"Carrying the trench down to the original surface of the ground, I found near the center, at the bottom, a single skeleton of an adult, in the last stages of decay, and with it two stone scrapers, a stone drill, fragments of river shells and fragments of a mammoth tusk. The earth below the thick upper layer was mixed with clay and ashes, or some other substance evidently different from the surrounding soil, but not so hard as the mortar-like material found in the mounds on the bluff."

Very respectfully, yours,

CYRUS THOMAS.

SMITHSONIAN INSTITUTION, WASHINGTON, D. C., Jan. 12, 1884.

ORIGIN OF "BANGS."

Editor American Antiquarian:

I enclose you a newspaper clipping written by Dr. A. G. Smythe, of Lee county, Mississippi, with whom I am now in correspondence. It gives an account of a style of wearing the hair among the Creeks and Cherokees 50 years ago, and precisely similar to the present style among white ladies,

H. S. HULBERT.

CRAWFORD, Mississippi, January 24, 1884.

In a late isssue of *The Clarion*, there is an article, on "Woman's Bangs," in which it is said there is no satisfactory

account of the origin or history of that institution. By your permission for the benefit of your fair readers, I will attempt to give some account of its use, if not of its origin.

Having spent a large part of my boyhood and early manhood upon the borders and in the territories of the Muscogee or Creek Indians, in what is now Eastern Alabama, I became familiar with the habits and language of the tribe, one of which was the custom of wearing the hair in the style and fashion, known as "Bangs," in civilized and fashionable life by the maidens of the present time. Whether it is the custom of that tribe at present in the Indian Territory west of the Mississippi, I do not know, but it was as common with the fashionable young squaws of tribes in the east from the year 1828 to 1838, as it now is among the fair votaries of fashion in civilized life. It was also the custom of the Cherokees.

I remember seeing one young white woman wearing hair in that fashion, in Altoona, Georgia, in the year 1838, and calling the attention of the spectators to it at the time (she was in a dance), I asked the questions, as to whether it was likely to become the style; little thinking that it would so become after forty years. A. G. SMYTHE.

OLD CORONA, Mississippi, March 26, 1883.

COPPER RELICS IN THE MOUNDS OF WISCONSIN.

DR. HOY, Sr:

Dear Sir — Knowing that for years the works of the mound builders have been closely studied by you, allow me the pleasure of describing to you a few particulars in regard to a mound opened by me in 1870. When an uncle of mine, by the name of Davis, was trapping on Root river, in the town of Raymond, Racine county, he discovered two small mounds on the northwest quarter of section 15. The mounds were situated on the east bank of the river, above high-water mark, yet very near to the stream, on a sand bank. One was partly eaten away by the stream, and the other, situated a few rods away, was covered with hazel brush, with a few large trees standing near by. The mounds were each about ten feet across, and two and a half feet above the level of the surrounding ground. We concluded to open the remaining mound; so after removing the hazel brush, and digging about three feet through sand and roots, we came to a bed of hard blue clay, which we threw out in chunks. Beneath the clay we came to a sort of cavity, containing fragments of bone and dark streaks of earth, which marked the location of what had once been a human form. From the appearance of what remained we came to the conclusion that the person must have been buried in a sitting posture; for we found a tooth or two where, apparently, the pelvis was

located, which must have dropped from the jaw above. By exercising care we might have preserved a complete cast of the interred, in the hard clay surrounding him. Near the center of the mound we found a copper kettle, with a hole in its bottom; within the kettle there was a quantity of dark earth, which was composed mostly of vegetable matter; being such a shapeless mass we were unable to determine just what it might have been. The kettle was about six inches across, with straight sides, it had ears and no bale, and in one place on its side, where there had been a hole, there was a rivet inserted, made of copper. The kettle was badly rust eaten, and when new must have been very thin. Mr. Davis either disposed of it or took it away with him, and where it is remains a mystery. We also found a copper spear head, and two irregular pieces of copper. The spear head was about three inches long, with a rivet hole in the shank. The pieces of copper show marks of pounding. They contain particles of silver and quartz, which show that they were never smelted. I am in possession of them. We, before restoring the mound, dug a foot or two in each direction, but found nothing more.

Very truly yours,
GEO. A. WEST.

RACINE, Wis. Jan., 15, 1882.

Editor of The American Antiquarian:

I have recently added to my collection a crescent-shaped copper, found in Hebron, Wisconsin, and a knife from Lima, Rock county, Wisconsin. This last specimen presents a peculiarity which seems to me worthy of notice, inasmuch as it does not appear in anything I have seen before. The specimen is six and three-fourths inches in length, its greatest width eleven-sixteenths of an inch. The blade does not differ from the type commonly found in this section, but the haft, which is an inch and a half long, instead of being turned up into a socket, as is usually the case, has upon one side five distinct notches, made by hammering, and intended to serve in holding it firmly when lashed to the handle. These notches have an average depth of one-sixteenth of an inch. If any of your readers have seen anything similar, I should be pleased to know it.

W. P. CLARKE.

MILTON, Wisconsin.

STONE MOUNDS IN THE KENAWHA VALLEY.

Editor American Antiquarian:

DEAR SIR—I would like to call your attention to a peculiar class of mounds in West Virginia that have never received much atten-

tion from antiquarians. I learn from the newspapers that a paper was read and discussed at a late meeting of the Anthropological Society at Washington, D. C., on stone mounds and graves in Hampshire county, West Virginia, and also found in other parts of the state. The writer takes the ground that there was an intermediate race between the Mound Builders and the Indians, but I have seen only a brief notice of the paper. Hampshire county is on the eastern slope of the Alleghanies. I have noticed these mounds in this vicinity. On Big Wheeling creek, perhaps twenty miles from the Ohio river, there were the remains of a village when the country was settled in 1793 that was covered by a young growth of timber; there were several of these stone mounds near it. They were made of stones gathered off the top of the ground; such as one man could carry, piled up loosely in the shape of a mound. Many bones were found under them. It appeared that earthenware had been manufactured extensively. Their implements are said to be superior to those used by the Indians. The ground near the village was covered with human bones when the country was first settled, indicating that the inhabitants had been massacred. Over in Washington county, Pennsylvania, there is a still more extensive ruin of the same people. Near Cannonsburg, same county, a church was built, the records say, chiefly from stone, taken from an Indian mound near by. While the Mound Builders occupied the rivers' front, these are between the Ohio and Monongahela rivers, back from the main rivers. Yours, etc., W. C. STEWART.

FRIADELPHIA, Ohio County, W. Va., Jan. 2, 1884.

ON A TURTLE-MOUND IN BELOIT.*

The relics of the mound builders which have many peculiar features in our state, are being so rapidly destroyed by a material civilization, that any facts in regard to them which come into the possesion of any one, should be carefully preserved.

Portions of a human skeleton having been found in a so-called Turtle mound in Beloit, by a company of my former students, I have collected by inquiry and observation the facts in regard to this mound as far as I have been able.

About half a mile north of the college grounds upon the east side of Rock river, and on a bluff overlooking the river, is a cluster of twelve mounds, somewhat thickly crowded together. They occupy an area 500 to 600 feet in length and 200 in width,

* This article was prepared by Prof. Eaton, of Beloit College a short time before his death. It was placed in the hands of the editor by Prof. Emerson a year or two since. It is given here under correspondence as containing useful information which should not be lost.

the longer being parallel with the river. Three of them are of imitative shapes and might be called Turtle mounds. Of the others four are conical and five elipsoidal.

They are figured in Dr. Lapham's Smithsonian Contributions, Vol. VII, 1855, and are alluded to by him in a brief paragraph, p. 33.

The largest of these is a Turtle mound, being a little north of the center of the group. The body is sixty-four feet long and the tail 52, the body being about three feet high.

The opening was made at random in the head, a little in front of the central line of the front legs. The question of interest attached to this mound is whether this burial was a primitive or secondary one, for, as I understand, it is supposed the conical mounds alone were used for sepulcheral purposes by the mound builders, and that the mounds of imitative shapes are the oldest.

The excavation was through black loam, resembling that which forms a thin layer upon the gravel drift of which the hill consists. This seems, therefore, to be an exception to the general statement made by Dr. Lapham, that "the animal shaped mounds and accompanying oblongs and ridges are composed of whitish clay or of the subsoil of the country," while it corresponds with his statement that "the burial mounds are usually composed of black mould or loam." Whether the earth was scraped up from the immediate neighborhood, it is difficult to say. If there is a depression around the mound it is too slight to enable one to assert its existence positively.

The bones were found after excavating about three feet. Those who made the excavations said the earth was packed very tightly, especially just above the bones. They also said that above the bones was a layer of gravel. Upon a subsequent visit I could not find any traces of this gravel, but it may have been covered up by the earth thrown out afterwards, and I have no reason to doubt the statement.

That the body was buried on or very near the original surface of the ground is evident from the fact, that after the bones had been removed, at a subsequent visit, I found a piece of the tibia still imbedded. Then below was one foot of the dark earth, then eight inches of gravel and then fine sand. Going outside a few feet beyond the line where the slope of the mound crossed the sand the same order was found, viz., one foot of soil, eight inches of gravel and then fine sand.

This would seem to imply both that the body was buried on the natural surface and that the material of the mound was not scraped up from the immediate vicinity.

The bones consisted of the left foot, of the frontal bone, and parts of the two perietal bones of the skull. They were very fragile and only held together by the earth contained in them.

Most of the teeth were present, imbedded in the earth inside the skull. They were in good condition. Twelve or more pieces of bones were found, among which were recognized a part of the tibia and humerus, also parts of either ulna, radius or fibula. There were several phalanges and a few very visible pieces of the bones of the pelvis, a part of one of the sockets for the former being found.

The body was evidently not interred in an extended position, for the bones were together, the pieces of the skull resting on some of the other bones.

A few very small pieces of red pottery were found, also the jaw of a small carniverous animal. There were no implements of any kind.

I leave the subject without expressing an opinion as to the age of the interment, for there are doubtless those present, who are better able to render one than I am, and all the known facts are now before you. S. EATON.

THE GREAT SERPENT MOUND.

Editor American Antiquarian:

DEAR SIR—Some time ago I received from you a report of the State Archæological Society and a circular in which many important questions were asked relative to the antiquities of the State of Ohio. I will try to answer some of your questions. Three miles east of this place, situated on the Bush-creek, there is a place which seems to have once been the village or abiding place of an ancient people long before this state or country was settled by the whites. There have been discovered here many skulls, and parts of skeletons, also pottery, stone-axes, arrow heads, teeth of all kinds, pipes and other articles. And on the hill overlooking said place is a mound, the size of which I do not remember as it has been a long time since I saw it, but I think it is about 10 feet high by 20 feet through and stands all alone in a forest. There are large trees growing on this mound.

One and a half miles east of this place is, what is known as the "Great Serpent," the length of which is several hundred yards. The serpent seems to have been placed or made here as a guard over the graves of the dead of this peculiar people.

Two miles south-west of this there is a place known as the "Old Fort." This is a stone circle, but not a stone wall. The circle is made of loose stones and dirt, and encloses many acres of land. Many relics are found here. Stone, axes, fleshers, spear heads, tomahawks, ornaments, pipes and pendants. Mr. J. W. Thoroman, of Dunkinsville, Ohio, has a small collection in which can be seen a large stone pipe made to represent a deer head. He has also specimens of pottery, teeth, etc. I

have never made any collections of this kind, but think I will in the future. If I find anything I think will be of interest to you I will write to you. In the future, if I could be of any service to you, please write to me and I will answer all your questions as far as I can. Respectfully, J. W. TRABER.

DUNKINSVILLE, Ohio, Adams County.

HUMAN FOOT PRINTS IN NICARAGUA.

Editor American Antiquarian:

My Dear Sir: In a recent trip to Managua for the Peabody Museum, to examine the human footprints found there in one of the quarries, now being worked for building purposes, I uncovered six rows of impressions, breaking through a layer of rock seven inches thick, over a space of six yards by two. Under this was a layer of black sand with an average thickness of one inch, resting on a layer of friable rock from one and one-half to two inches thick, covering the surface of the lowest layer of rock found in the quarry. Below this thin layer was a thin deposit of volcanic sand and gravel, filling up the inequalities caused by the impressions, with an average of one inch in thickness, as seen in the side cuttings.

The rock seems to owe its formation to a volcanic detritus, and ash brought down after the first volcanic eruption. I cannot account in any other way, for its original plasticity, as but little clay could reach the surface, if the eruption covered the neighborhood with rock and ash—evidenced in many places of a large district where this kind of rock occurs. Impressions of leaves and stems occur on the under surface, denoting an absence of forest at the point worked. The upper surface is nearly level, with a barely perceptible dip toward the lake shore — distant some 300 yards, and whose waters must have formerly occupied — or overflowed at times of high water, as some of the aquatic plants, common in the marshy districts, are among the impressions preserved.

The footprints are from one-half to three inches in depth, consequently not made, as some had judged, by a people, fleeing from an inundation. In those exposed there is no length of stride to indicate it, and in the many removed by the owner of the quarry, none exceeded eighteen inches. Some of the impressions are nearly closed, the soft surface falling back into the impression, and a crevice about two inches in width is all one sees, and my first glance at some parallel to one less deep, gave me an idea that the owner of the latter was using a stave to assist him in walking. In some the substance flowed outward, leaving a ridge around it — seen in one secured for the museum; the stride is variable, owing to size of person, and the changing nature of surface passed over. The longest one uncovered was

seventeen inches, length of foot ten inches, and width four inches, feet arched, steps in a right line, measured from center of heel to center of great toe over three steps. The people making them were going both ways in a direction consonant to that of the present lake shore E. and W. more or less. The nearly level surface extending around the neighborhood of the quarry prevented me from judging as to the nature of or mode of arrival other than that mentioned. As far as worked out, the thickness varied but little from twenty-eight to thirty inches. Following the inequalities of the primitive soil, the perpendicular cuttings on the southern and eastern faces of the quarry above the layers mentioned, show in only one place a barely perceptible dip to the east. The layer removed was covered by one of hard clay, with streaks of white pumice stone beneath and mingled with its lower surface—thickness seen in the cutting twelve inches; above this was a layer of ash, slate colored, very hard, seen in the cuttings along the Masaya road, and also between Granada and Jinotepe—west of latter place, 15 feet in thickness, under 15 feet of loam. In the location worked was only 14 inches, mixed with stems of plants and leaves on and near its under surface. Above this ashy formation are four successive layers of rock, similar to the lower one and are being used for building. The lowest averages 28 inches; the others from 17 to 20 inches. The detritus separating the layers is insignificant. Saw many blocks, and found cavities formerly occupied by stems of plants, but none have leaves like the lowest layer. I think these layers were the results of different eruptions. The clay deposit one of repose.

The depth from the surface of the impressions was 14 feet 10 inches — not counting the surface soil, the strides from 11 to 17 inches. I would mention that later, the purchaser of those remaining uncovered, intends removing them to Europe and will be able to give a correct estimate of each. He kindly gave me permission to remove two. Had he not purchased the site, only the story of their occurrence could be relied on to prove man's antiquity here.

It is useless to speculate on the lapse of time that has passed since their occurrence. Experts in geology may give approximate dates.

Before examining them I was inclined to believe they were coevil with those at San Rafael, but am now convinced that they are in an entirely different formation. The former occurs on sedimentary rock of that locality. One human footprint associated with those of a tiger on hard volcanic rock, on the banks of Grand river, at Pinon, west of Jinotepe is now easily explained. I went in May to cut it out and found the place covered by water, but intend visiting San Rafael to procure specimens from them. Unlike those at Nevada the people of this region needed

no covering to protect their feet from a rigorous climate. The discovery is unique and worth recording.

With respect I beg leave to remain truly yours,

EARL FLINT, M. D.

RIVAS, Nicaragua, Jan. 7, 1884.

CORNISH ANTIQUITIES.

Editor American Antiquarian:

The question has been asked me, what account I have to give to American friends of the rude dwelling at Gurnaud's Head (on the north coast of Cornwall, some ten miles from the Lands End, England), also of the huts at Bosullow, recently inspected by the Pensance Antiquarian Society.

As to the former, I should say that great caution should be used before expressing any positive opinion, but my own impression is that it is a more modern edifice than is commonly supposed, though very rude and built in an ancient style. Dr. Mitchell's splendid work, "The Past in the Present," ought to make us very cautious in supposing that a building is ancient because it is rude. Dr. Mitchell proves that even at the present day, in this age of railways, telephones and photographs, there are people in Scotland who make and use stone implements, which might, if dug up, be thought to belong to the stone ages! Archæologists who do not know the primitive habits and customs of peasantry in remote parts of Europe, and even of the British Isles, have no idea how many archaic customs, and even implements larger in out-of-the-way places. I myself could add extensively to Dr. Mitchell's interesting list by my own observations in Eastern Europe and even in Cornwall. The primitive Aryan is not so extinct as people supposed. There are people now living in Europe who dress very much as their ancestors did in the days of Herodotus, who, although Christians, invoke heathen gods and the forces of nature, offer sacrifices, make children and cattle pass between fires, have their property in common (belonging to the Mir or Commune). Till a few years ago there were cave dwellers in England (in the Worcestershire caverns) and Dr. Mitchell says they still exist in Scotland. So in an archaic and in some points very conservative country like Cornwall, one ought to be slow in pronouncing a building prehistoric because it is rude and singular.

The British village of Bosullow is undoubtedly ancient, though how ancient it is difficult to say. If not before Julius Cæsar's landing in Britain it is probably of the type of dwelling which existed before that age. I have heard it suggested that it may have been a Culdee monastery of the Brito-Celtic monks of S. Columbia, but I see no reason to suppose it connected with any

Christian church. The characteristic of these ancient British dwellings is their circular form. The Britons built in circles, the Romans in squares. We have adopted the Roman theory of architecture, but there are people in Cornwall and elsewhere who think there is something in favor of the circular system. At any rate, it is natural, like the nests of birds and other animals, which are rarely square. W. S. LACH SZYRSMA.

THE COLORS OF THE WINDS.

Letter to London Academy. Nov. 3, 1883—I see that in the *Academy* of August 18, Mr. Whitley Stokes has called attention to the colors assigned to the winds and to the cardinal points from which they blow. He refers to an article by Dr. Brinton in the *Folk-lore Journal*, Vol. i., p. 246, where the colors assigned to the different points of the horizon by the Central American nations are discussed. In an interesting article on the "Navajos Mythology," which has just been sent to me by Mr. W. Matthews (from the AMERICAN ANTIQUARIAN for April, 1883), I see that by them, too, colors have been assigned to the winds, though in a somewhat different order. With them the east is dark, the south blue, the west yellow and the north white.

Mr. Whitley Stokes calls attention to the fact that the Irish have likewise assigned colors to the winds, or to the four cardinal points; and the *Saltair na Rann*, which he has just edited in the *Anecdota Oxoniensis* the east wind is represented as purple, the south as white, the north as black, the west as dun. This is very like the distribution of colors among the four cardinal points, which we find in the Veda. In the *Khandogya-upanishad* ("Sacred Books of the East," Vol. i., p. 38) the east is red (*rohita*), which is natural, the south white (*sukla*), the west dark (*krishna*, or dark blue), the north very dark (*paran krishna*). The intermediate points, the *vidisah*, were likewise known during the Vedic period, but I cannot remember that any colors have ever been assigned to them. F. MAX MULLER.

OXFORD, England, October 27, 1883.

LATE DISCOVERIES IN CUNEIFORM INSCRIPTIONS.

Editor American Antiquarian:

In a late number of "The Transactions of the Victoria Institute," London, appears a report of Hormusd Rassam's recent discoveries in Assyria and Babylonia, particularly the latter, as read by himself before that Institution; and to this is added an appendix by Mr. W. St. Chad Boscawen, of a very interesting character. As Mr. Rassam's discoveries include some of unusual importance and value to science, and as his report of the same

will hardly reach a majority of the readers of the ANTIQUARIAN, I have believed it desirable to prepare a condensed statement of the more important facts brought to light, and through Mr. Rassam's researches, for publication in this journal.

Since the loss by death, of the invaluable services of Mr. Geo. Smith, the trustees of the British Museum have sent several times to the valleys of the Euphrates and Tigris, Mr. Rassam, to make excavations on the sites of the buried cities of that part of the world; and having had before valuable experience in such labors, he has been very successful in his expeditions. This report relates to his more recent lat ors, and is confined mostly to the "Babylonian Cities." By mere accident, and while on his way to examine another place, he came upon an extensive mound called *Aboo-hubba*, which he perceived at once to be the site of a Babylonian city, apparently of much importance. Subsequent excavations proved it to be the ruins of the city whose name is familiar to every cumiform student, the ancient *Sippara*, the *Sepharaim* of the Old Testament. The identification of the site of this city had long been sought, and this discovery first determined its exact locality. Instead of being situated on the banks of the Euphrates, as long supposed to have been, its site is six miles distant, and on the banks of the great canal called *Nahr-Malka*, fed from the Euphrates. The mound had an immense extent, being 1,300 feet long and 400 wide, including, it is estimated, some 300 chambers, of which only 130 have been explored. Hundreds of clay tablets were found and a great number of terra-cotta cylinders of all shapes and sizes.

Sippara was known to be one of the most ancient cities of the world, and according to Berosus it actually existed before the deluge, being the home of five kings, among the list of ten antedeluvian kings as given by Berosus. It was here, accordiug to the same author, that Xisuthrus, the Babylonion Noah, was directed to bury the Sacred Books, that they might be preserved during the flood, for the use of the post-diluvian world. It was here, too, that Nebuchadnezzar, and before him other monarchs, as early as the thirteenth century B. C., had made search for those very records deposited in the foundations of the temple of Ul-bur, the sun-god, of which the present writer gave an account in a previous article in this journal, entitled "Antiquity of Sacred Writings." Little did the writer dream at that time that certain views expressed in the paper referred to, were so soon to receive confirmation; the fact that there were sacred tablets buried there being now placed beyond much doubt.

But that which lends much importance to Mr. Rassam's location of Sippara, is the fact that it definitely determines the site, also, of the primitive Accad, one of the four cities of Nimrod's kingdom, whose situation was unknown before, while the other

three cities of Nimrod were long since definitely located. It was known that Agade, the capital city of Sargon I., the Babylonion Moses, was none other than the ancient Accad of Genesis; but where Agade was had not been discovered, except that it was also one with Sippara. Mr. Rassam has now solved the problem; the mound of Abbo-hubba was the site of the original Accad, the last of Nimrod's four cities to be identified in its situation. Mr. Boscawn thus alludes to this point in his appendix: "But in the discoveries at *Abbo-Hubba*, Mr. Rassam has been the finder, not of one city only but of three, for it now becomes evident that Sippara was also the *Agade* or *Akate*, the capital of the first great North-Babylonian king, Sargon (B. C., 3800), and also synonymous with the Akkad founded by Nimrod (Gen. x. 10). In one inscription (W. A. G., i. pl. 69, lines 29, 33, col. 2.), Nabonidus states that Sargon, king of Babylon, and Narani Sin, his son, restored the temple of Agade, called E-Ulbar (Temple of Ulbar), 'The house of the Stars,' but, in a newly found cylinder deciphered by Mr. Pinches, this temple is said to be in the city of Sippara. Also in a remarkable inscription of Nebuchadnezzar I., (B. C. 1140,) King of Babylon, the goddess is specially invoked as *bilat al Ak-ka-di*, Lady of the city of Akkad; so that now we have the last of the cities of Nimrod restored."

It will be noticed that Mr. Boscawen assigns Sargon I. to B. C. 3800. Until recently, English assyriologists, Mr. Smith and others have placed this King in the 16th century B. C.; while Mr. F. Lenormant assigned him to the period about 2,000 before our era. But late discoveries have carried this monarch back to the surprising antiquity of 3800 B. C. It so happened that Dr. F. Delitszch, one of the best assyrian scholars of Germany, was present at this meeting of the institute. In a few remarks on Mr. Rassam's paper, he said: "Mr. Rassam has found an inscription which gives us the date of one of the oldest known kings, Naramsin, son of Sargon the First. The inscription fixes the date of that king at 3800 years before Christ.". Dr. Delitszch further observed: "It is remarkable that this is the same date given by Egyptologists to Menes, the first historical king of Egypt (Id). In an article on the Origin of the Babylonion Civilization, published some years ago, we took the ground that a comparison of the Borsippa pyramid originally the "Tower of Babel," with the brick pyramid at Sakkara, in Egypt, the most ancient in the Nile country, both being in stages and of brick, proved that the two civilizations of Babylon and Egypt had a community of origin, and were equally ancient. Now, Mr. Boscawen says: "At the remote period prior to B. C. 3750, at a time when Menes, B. C. 3892 (according to Lepsius), was laying the foundation stones of the temple of Phtah, the Chaldaean builder-king Zabu was laying the foundation stone

of the shrine of the sun-gods, which formed the germ of the city of Sippara." It was only recently that we could carry back the chronology of Babylon hardly 2500 B. C. This builder-king Zabu, or *Za-bu-um*, is the king named in the inscription of Sag-araktiyas, quoted in the article on the "Antiquity of the Sacred Writings," etc., before mentioned. It seems now not impossible that sacred writing may have existed in Sippara, at the early date even, to which the elder Sargon is here assigned. So in the article on the "Pyramidal Temple," previously published in the Oriental Department of the ANTIQUARIAN, an anology was sought to be established between the pyramidal and the Jewish temple. Mr. Boscawen shows that the ancient temple of the sun-god, in Sippara, was precisely after the plan of that adopted by the Hebrews. At the writing of that article we were able to cite only the authority of Mr. Lenormant, that the pyramidal temple in stages, was designed as an imitation of the traditional mount of Paradise, the *Har-Muzd* of Isaiah.

But now Mr. Boscawen fully confirms Lenormant. On the Borsippa Towers in stages, he says: "The God of heaven, Anu, is here called 'The King of the Holy Mountain.' This is the mountain of the gods on which the ark rested, and whose summit was the Olympus of Chaldean mythology. Like the Indian mountain of Meru, all the Babylonian stage towers were built in imitation of it." This is an important confirmation of the theory that the primitive temples of Asia were traditionally derived from the Paradisiacal mount identified with that of the deluge. There have been many fanciful theories of the origin of the temple, as for instance, the ancient dolmens, the tombs of the ancestors. But the proof is not quite positive that the Asiatic temple, of which those of the Euphrates were the primitive type, the pyramid in stages, had a direct, regular genealogy, to be traced to the Paradisiacal mount, which universal tradition identified, as Faber and other mythologists of his day fully proved, with the diluvian mount. Mr. Boscawen following other English Assyriologists, and recently Dr. Delitszch locates the terrestrial Paradise, the Eden of Genesis, in the plains of Shinar. This theory violates every condition of the problem. The fact is, that every one of the more ancient civilzations had its own Eden, but these were mere imitations, the traditional ideal which the first migrating peoples carried with them from their common home. The primitive migrations of races never had for the original point of departure the plains of Shinar nor the mountains of Armenia. The Chinese, for instance, never migrated from the valley of the Euphrates, nor any other region of western Asia. The high table lands of central Asia are alone the common point of departure, from which we can trace with some probability all the primitive migratory movements of the first ages. But we will not occupy more space with these matters.

O. D. MILLER.

NASHUA, N. H., February, 1883.

EDITORIAL.

PICTURE WRITING.

Among the prehistoric tokens of America none are more interesting than the picture writings which are found in various parts of the country. Their prevalence has been noted at different times, and various authors have described the writings which have come under their observation. Among the authors who have given descriptions, the most prominent is Mr. H. R. Schoolcraft, who, in his work on the Indian Tribes, has given a number of characteristic specimens. These facts have been repeated by Sir John Lubbock, in his history of civilization as illustrating the primitive stage of the art of writing. As tokens of a civilization, which potentially, at least, existed among the native races of America, these pictographs are certainly very interesting. They may be considered the most primitive specimens of writing extant in the world, but they show how native races were accustomed to communicate ideas. They illustrate what may have been the source of the various kinds of writing which prevailed among the uncivilized races. The germs of the art of writing being here exhibited in a clear and striking light, we propose to give a few specimens of picture language, by way of illustration suggesting this inquiry, whether all of the styles of writing may not be traced back to something similar to these. This is, to be sure, a conclusion which cannot be drawn from actual proofs, as no continuous line of development in the art of writing has ever been discovered. There are successive stages of culture on the American continent which indicate what may have been the development of society in prehistoric times. Along with these successive stages the art of writing is discovered in various degrees of advancement, so that the study of the specimens becomes very suggestive.

There is one consideration which needs to be mentioned, and that is, that on the American continent the culture was purely natural without intrusion from other sources, and writing was the product of social development without regard to any distinction in the classes. In Oriental countries we find that writing was an art known to the priestly office, but unknown to the masses. The term Hieratic shows this. The first or earliest style of writing in Egypt was so-called because it was a style which was introduced by the priests. Endemotic writing, that is writing which was known to the people, according to Egyptologists, succeeded the Hieratic, and is generally regarded as a later invention. In America, however, the Endemotic preceded the Hieratic. There was a culture in Central America which exhibited the same characteristics as to writing, that we

find in Egypt. Among the Mayas, the priests introduced systems of notation, and methods of recording, which were too difficult for the people to understand, and in this way threw an air of mystery over the so-called hieroglyphics which embodied the chronological tables of the nation.

The term hieroglyphics becomes, on this account, significant in America as well as in Egypt. Hieroglyphics are distinguished here from picture writing by the fact that they were in the hands of the priests and were known mainly to them. The interpretation of the characters was committed to a class who might be called the recorders or interpreters of the people. Picture writing, on the contrary, was practiced by all classes, and conveyed ideas to the masses so that it may be called endemotic instead of Hieratic; its meaning was manifest to them while that of the hieroglyphics was hidden.

One more point needs to be considered before we proceed. The art of picture writing should be studied in connection with sign language. This sign language was very common in America and reached a high degree of perfection.

We are happy to call attention to the work which Col. G. Mallory has done in connection with the Ethnological Bureau at Washington. There is much that is suggestive in his monograph which is published in the first annual report of the Bureau. It appears from this that a complete system of signs existed among the natives and that this formed a method of communication entirely different from picture writing. Colonel Mallory has not been able to show the correspondence between the pictures and the signs, though he has supposed that there was considerable analogy between them. Certain arbitrary signs and conventional methods of expression have arisen. There are also certain arbitrary marks in many of the pictographs which were conventional symbols of thought, the meaning of which is not apparent to us now. If we should trace a correspondence between the arbitrary signs and conventional symbols, we possibly might find in this way a system of interpretation, the sign language becoming a key to the picture writing. That there was some correspondence between these two methods of communication we think will be manifest from certain known facts. To illustrate an ingenious mode of giving intelligence is practised by the *Abnaki*. When they are in the woods they will place one end of a stick in the ground pointing the other end in the direction they are going, and then place other sticks across this to signify the number of days which they expect to take in their journey. Still another method of communicating is by a system of nemonics. A pile of stones or a pit in the ground, a heap of buffalo horns or knots tied in a cord were used as signs to assist memory, and these became in a sense records for the natives. The so-called quippus or knot-

ted cords were the most common of these signs. These quipnes were prevalent among the Moquis of Arizona as well as among the Peruvians of South America.

These three methods of communicating were perhaps as primitive as picture writing, and may have formed a basis for the development of language in different lines, though we cannot say that all writing can be traced to them as the sole primordial element.

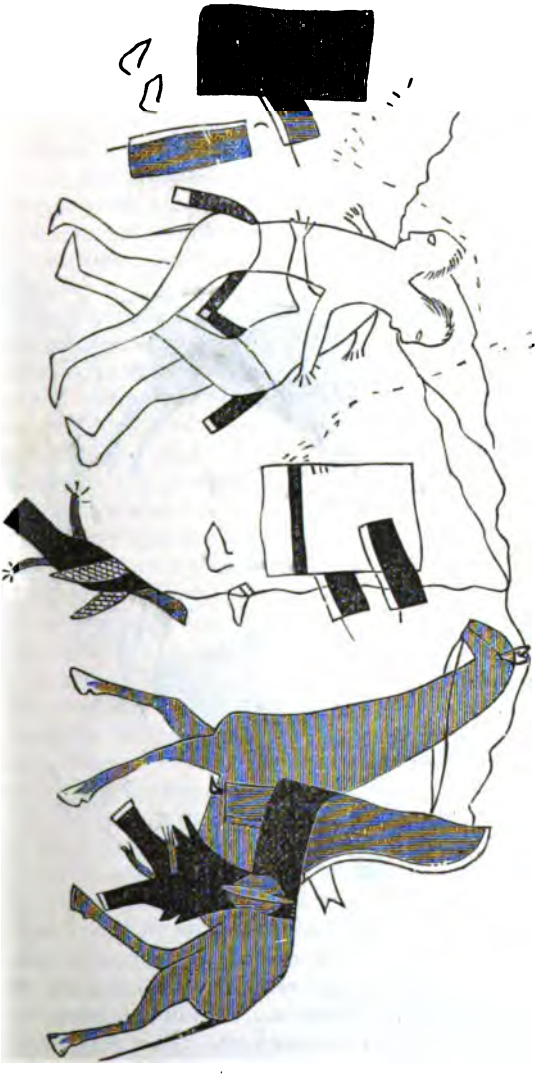

PLATE I. Photograph from an Indian Drawing Book, Florida.

Astle, in his History of Writing, has shown that the quippus, or knotted cords, were used by the Chinese, and thinks that they can be traced in certain lines which still exist in their writing. He has also discovered certain lines and knotted cords in Egyptian writing which he thinks may be traced to the same source. These views are here given by way of hints, without saying for certainty that Astle's position is tenable.

The subject of picture writing in America becomes, however, very interesting, since it illustrates the stages through which this art may pass. The simplicity of many of the pictographs on this continent is worthy of attention. This gives us one evidence that

this style of writing was here very primitive. We present to our readers some specimens of picture writing which have this element of simplicity in them, and would call attention to the ease with which these were interpreted. We may hereafter give other pictographs which are more complicated. Two cuts taken from the first report of the Ethnological Bureau will show how ideas were conveyed by picture language. Both of these

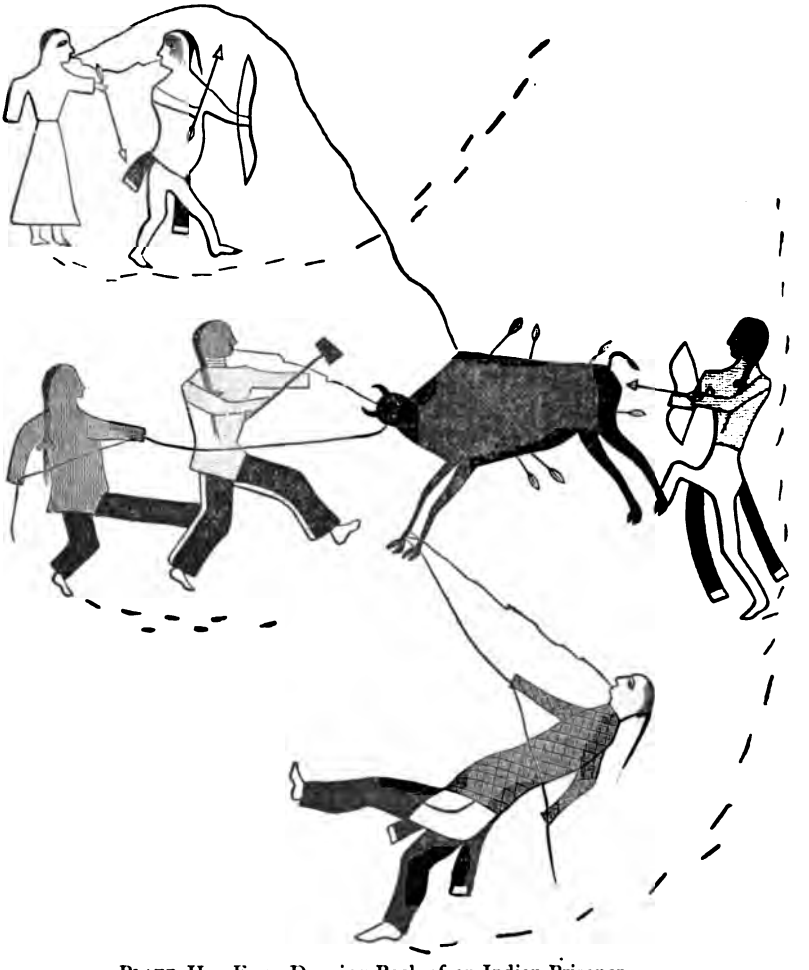

PLATE II. From Drawing Book of an Indian Prisoner.

are from a modern source. They represent the pictures contained in a manuscript drawing book which was kept by an Indian, a prisoner in St. Augustine, Florida. The first represents a contest between two Indians over a turkey. The second illustrates a hunting-scene, in which a company of Indians are catching and killing a Buffalo. It will be noticed that both

pictures are alike in their method of illustrating the facts. The figures are depicted in life-like attitudes and in full form, nothing arbitary or conventional about them. The forms and faces of the men indicate that they are Indians, though the dress shows that they are modern Indians. The animals are imperfectly drawn, but so represent the horse, buffalo, and turkey that they cannot be mistaken. The foot prints and blankets and ropes and weapons are easily understood. The only arbitrary or symbolic feature about the two pictures is the line which represents speech. This is seen in both pictures, and is the object for which the cuts are used in the report. This line illustrates one method of sign language, the sign for speech, being here depicted on the paper rather than by gesture. An explanation of the picture is given by Mr. Mallory in the report. The wrestlers according to the foot prints had evidently come together, and had met a returning hunter who is wrapped in his blanket with only one foot protruding. The hunter has, hanging from his saddle, a number of animals which he has brought in from the chase. He seems to have given a turkey to one of the parties, and this has become the object of contention. The two have separated and thrown off their blankets, leggings, and moccasins, and are wrestling. The attacking party has a line from his mouth going in an opposite direction from the hunter, but the other wrestler has a line communicating with the hunter showing that he had received the gift and claimed it as his. A line from his mouth to the turkey shows that this is the object for which he is contending. The line from the head of the hunter to the ear of the other wrestler shows that he is remonstrating with this one.

In the second picture the tracks show that an Indian and a squaw have driven a buffalo into camp. One Indian has wounded the buffalo as the arrows are sticking into its sides. The squaw has seized an arrow and is telling her husband to take it and shoot the buffalo. The husband, who is in dishabille, has, however, already seized his bow and is saying that he has an arrow. The lines of speech and the attitudes of the persons indicate all this. One of the Indians has a lasso in his hand and has caught the buffalo by the foot. He is telling that the lasso is on the foot, the line indicating speech being forked, a part fastened to the lasso, and a part to the leg. Two other Indians have run out from camp to catch the buffalo. One has thrown a lasso over the horns, another has an ax and is about to strike a blow at the buffalo's head which is turned up in just the right position. The sign for speech and the weapon and the attidude of the last figure tells the story as to what he is about to do.

These two pictures illustrate the ease with which the natives could convey ideas by drawing. They are modern, but illustrate the point. The same point is shown by certain pictures which were seen by Schoolcraft in his travels. Two instances came

under his observation in one journey. This journey was in company with Gen. Lewis H. Cass. Schoolcraft visited the tribes in the region of the Mille Lacs. On his way he crossed a portage at the west end of Lake Superior. Here occurred one instance of picture writing. A native who was guide to the party before starting one morning took a pole and stuck it in the ground, leaning it in the direction in which the party was going. He then took a piece of birch bark and drew a picture on it and fastened it to this pole. The bark contained the picture of the party and conveyed information as to who were in the party and how they had slept and ate the night before. The pole indicated the direction that they were to go that day. On the bark was a row of seven soldiers with seven bayonets at one side of them and a fire at the other. The fire denoted that these seven had slept in a lodge by themselves. Below this was another row of figures which represented first the commander who had a drawn sword in his hand, next the secretary, the book in his hand, denoting his office, next to him the geologist, hammer in hand, and his three attaches, with various implements; next the Chippewa guides with spears. The soldiers all had hats on their heads to distinguish them from the guides who had no hats. Below these on either side of the picture were two fires denoting that the officers and guides had separate messes. Between the fires was a picture of a prairie hen and a tortoise, indicating that these had been killed and eaten, forming a part of the mess of the night before.

Further on in the journey the party came to a spot where was a pole, and on the pole a letter written in picture language. This letter was taken down and read without hesitation by the Indian guides. It was a letter from the Sioux offering peace to the Chippewas. This letter contained a picture of a fort with the American flag and eagle over it in one corner, indicating that it was from the cantonment or fort, on the St. Peter's river. Below these was the figure of the commanding officer, Col.. H. Leavenworth, under whose authority the mission of peace had been sent. By his side is Chakope, the leading Sioux chief, with his sign on his breast. To the right of these are three rows of lodges or tents. The lower row seemed to have been under the charge of a chief whose name was Black Dog, the figure of a black dog by the side of the chief signifying his name. The row above this has a chief depicted at the end with a bale of goods at his side signifying that these were to accompany his offers of peace. The upper row of lodges has a chief at the side, and a lodge separate, as if a lodge was set apart for a council house. The picture conveyed the idea at once and the letter was easily understood as an overture of peace, and when understood gave satisfaction to the party concerned. There are many other specimens of picture writing on record.

Some of these have been published. The Academy of Science, at Detroit, has a specimen which gives the biography of a Chippewa chief. This biography was written on a small billet or tablet of wood, the figures being cut into the wood in outline. An account of this has been published by the Northern Ohio Historical Society, but no interpretation of it has been given.*

Dr. W. J. Hoffman has also described some rock cuttings made by the Coyoteros, and found near Camp Apache, on the Staked Plain. They are modern and show one mode of conveying ideas. The principal figure represents a pack-mule. Four lines beneath show the additional number of animals connected with the train. A large star at one side represents the sun. Ten spots on a line connected with the sun represent the number of days or suns the party spent in the territory of the Coyoteros.†

There is a description of other specimens of picture writing in the report ‡ of the railroad survey of the route to the Pacific Ocean, one of which we give in the cut. These figures were found upon the roof and sides of a shelter cave, at Rocky Dell Creek. Some of th ee, it will be noticed, are evidently modern, as there are pack-horses, mules, dogs, and a saddle-horse in one group. The group represents a Spanish Caballero, who extends his hands in amity to the Indian who stands by his side, but who apparently rejects the offer. The figures in the upper part of the picture are described as having the appearance of age. There is, however, in one line the figure of a priest with a cross, showing that even this is modern. Judging from the attitudes we should say that the cross was used as a protection against the alligator who had made his appearance in their midst. In the upper group, the central object represents a man with enormously large ears, but with a gun and a sword in his hands, and by the side of this are two small figures whose costumes have a decidedly modern appearance.

The only purely native picture is that which occupies the upper right hand corner. See Plate III, Fig. 2.

"This picture has been interpreted as a representation of some superior being, with wings, perhaps to denote spirituality, and a hand, signifying that he is the creator of the sun, which appears issuing from it." We doubt the correctness of this interpretation. The sun is evidently detached from the hand, and is connected with a tree or pole. The branches of the tree, or divisions of the pole, may have represented days or years. The lines to either side and over the head may possibly represent wings and the sym-

* See tract No. 40, Northern Ohio Historical Society, Cleveland, Ohio.

† See Hayden's Geological and Geographical Survey, 1876, "Ethnographic Observations," W. J. Hoffman, p. 475.

‡ See "Report upon the Indian Tribes," by A. W. Whipple, Thos. Ewbank and Wm. W. Turner, p. 38, "Survey for the Pacific Railroad," vol. III.

bol of a nimbus, but there is some uncertainty about this. It is an unusual method of symbolizing a truth, though if borrowed from the priests, might be significant. The Pueblo Indians, who visited the surveying party, decided that the figure was a repre-

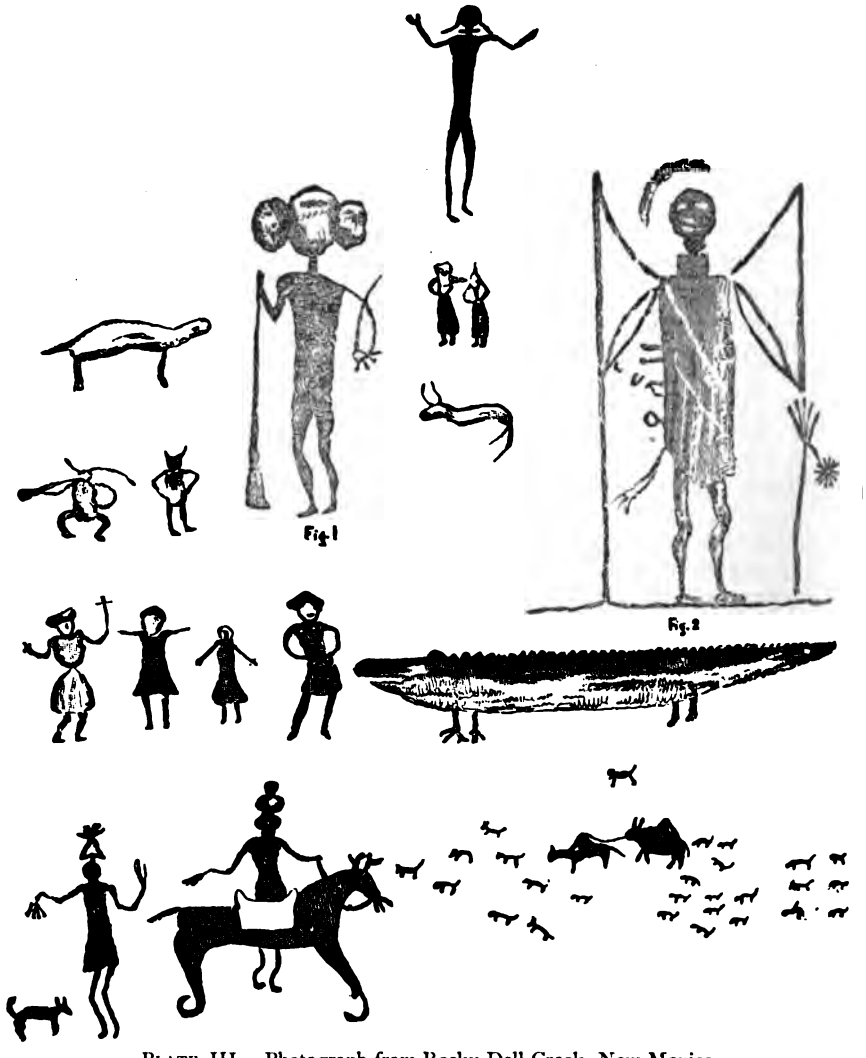

PLATE III. Photograph from Rocky Dell Creek, New Mexico.

sentation of Montezuma, placed here to sanctify the spot and secure a perpetual supply of water. Another figure, which is also described in the same report, they said represented the great water-snake, created by Montezuma, to give rain and preserve the lives of those who should pray to him. They described this

snake as being as large around as a man's body, and of exceeding great length, and as slowly gliding upon the water in long, wavy folds, reminding one of the accounts of the Nahant sea-serpent. It is said that this place was once a favorite buffalo range, and here their fathers feasted and danced, and then, sitting by the water side, recorded their thoughts and deeds upon the rocks. Turning to certain inscriptions, which represented men with horns and with clawed feet, their arms, hands and fingers extended, as if in astonishment; they said that this was a representation of a buffalo dance, from time immemorial a national festivity, at which they crowned themselves with horns and corn-shucks.

These Pueblo Indians say that Montezuma is a god. Inferior to him is the sun, to whom they smoke and pray; because he looks upon them and knows their wants. The moon is the younger sister of the sun, and the stars their children. All are worshipped. Besides these, is the great snake, to whom, by order of Montezuma, they are to look for life.

The tradition is, that Montezuma while at Pecos, one of the principal towns of the Pueblos, took a tall tree and planted it in an inverted position, saying that when he should disappear, a foreign race should rule over this people, and there would be no rain. But he commanded them to watch the sacred fire till that tree should fall, at which time white men would pour into the land from the east, to overthrow their oppressors, and he himself would return to build up his kingdom. The earth would again be fertilized by rain, and the mountains yield treasures of silver and gold.

This tree may possibly be the one which is figured in the picture, the roots upturned and the sun attached to the roots. It is an interpretation at any rate which is worthy of thought.

This was in New Mexico. There are other inscriptions in Colorado. Some of these have been described by W. H. Holmes. *

"Although it is quite impossible to read the curious rock inscriptions of unknown tribes, it is conceded that in most cases they have a meaning and represent an idea or record an event.

The two following plates are given from this report. These inscriptions are found associated with the cliff dwellings, some in the canyon of the Mancos, others on the bluffs of the San Juan, and many in the canyons farther west. Figures 1, 2 and 3 occur on the Mancos, near a group of cliff houses. This group has been figured in the AMERICAN ANTIQUARIAN.†

They are chipped into the rock, evidently by some very hard

* Tenth annual report Geol. and Geog. Survey, by F. W. Hayden, Washington, 1878. Part III, "Report of Ancient Ruins of S. W. Colorado," W. H. Holmes, pp. 401 and 402.

† See AMERICAN ANTIQUARIAN, Vol. V, No. 1.

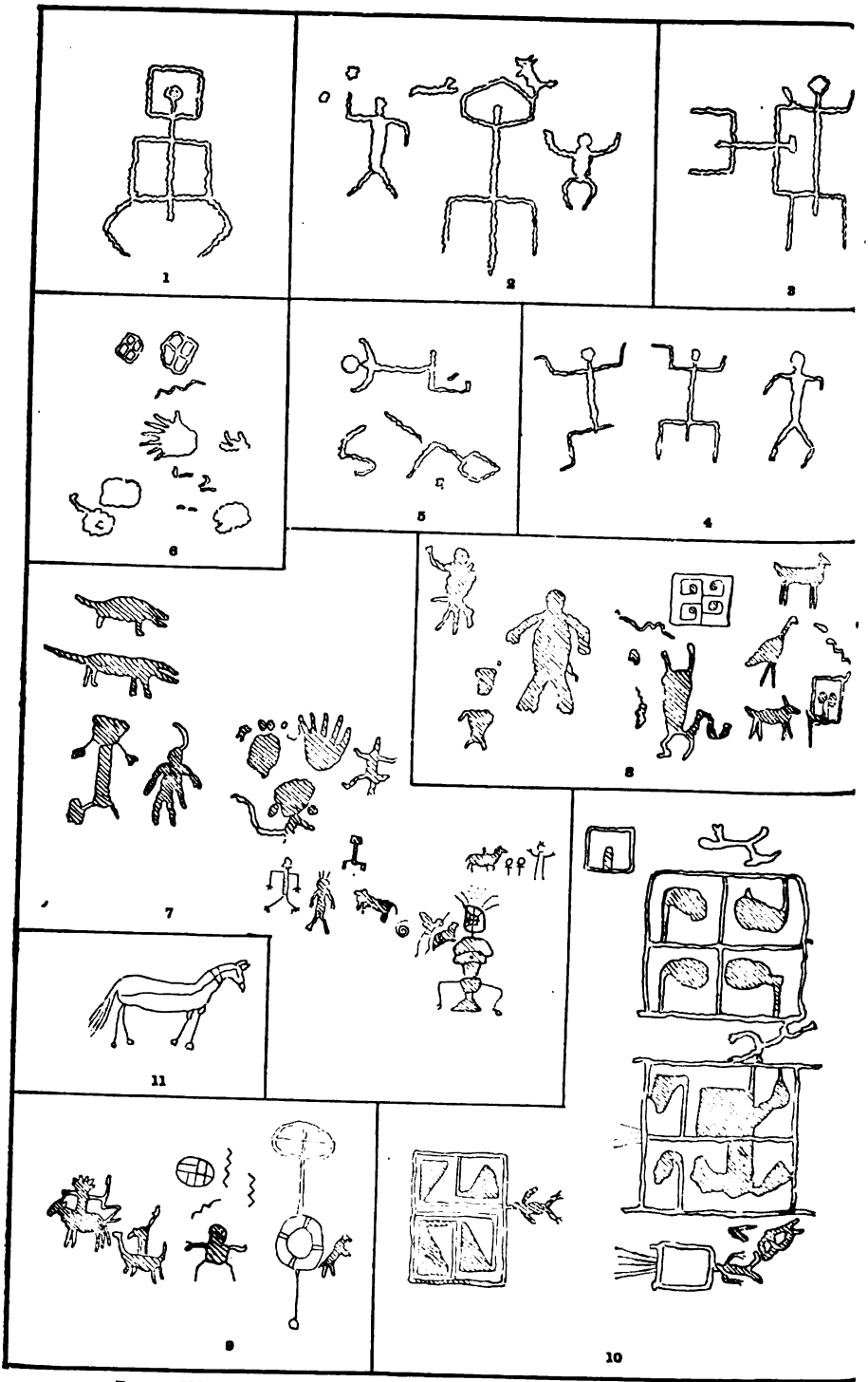

PLATE IV. Pictographs of the Cliff-dwellers, from the Mancos, Colorado.

implement, and rudely represent the human figure. They are certainly not attempts to represent nature, but have the appearance rather of arbitrary forms designed to symbolize some imaginary being.

Figures 4, 5, and 6 were found in the same locality not engraved, but painted in red and white clay upon the smooth rocks. These were certainly done by the cliff-builders, and probably while the houses were in process of construction, since the material used is identical with the plaster of the houses. The sketches and notes were made by Mr. Brandegee. The reproduction is approximately one-twelfth the size of the original.

The examples given in Figures 7, 8, 9, 10 and 11, as well as those in Plate V, occur on the Rio San Juan, about 10 miles below the mouth of the Rio La Plata. A low line of bluffs, composed of light-colored massive sand-stones, that break down in great smooth-faced blocks, rises from the river-level and sweeps around toward the north. Each of these great blocks has offered a very tempting tablet to the graver of the primitive artist, and many of them contain curious and interesting inscriptions. They are all engraved or cut into the face of the rock, and the whole body of each figure has generally been chipped out, frequently to the depth of one-fourth or one-half an inch.

The work on some of the larger groups has been one of immense labor, and must owe its completion to strong and enduring motives. With a very few exceptions the engraving bears undoubted evidence of age. Such new figures as occur are quite easily distinguished, both by the freshness of the chipped surfaces and by the designs themselves. Fig. 11 gives a specimen of the modern work; it is evidently intended to represent a horse, and is done in the manner of the Navajoes. It will readily be seen that among all the figures given of the ancient work there is no animal that resembles a horse, and we can hardly suppose that artists who could so cleverly delineate birds and deer and men, would fail in an attempt to represent an animal of so marked character. The curious designs given in Figure 10 have a very perceptible resemblance to many of the figures used in the embellishment of pottery.

The most striking group observed is given in Figure 1, Plate V. It consists of a great procession of men, birds, beasts, and fanciful figures. The whole picture as placed upon the rock is highly spirited, and the idea of a general move nent toward the right, skillfully portrayed. A pair of winged figures hover over the train, as if to watch or direct its movements; behind these are a number of odd figures, following by an antlered animal resembling a deer, which seems to be drawing a notched sledge containing two figures of men. The figures forming the main body of the procession appear to be tied together in a continu-

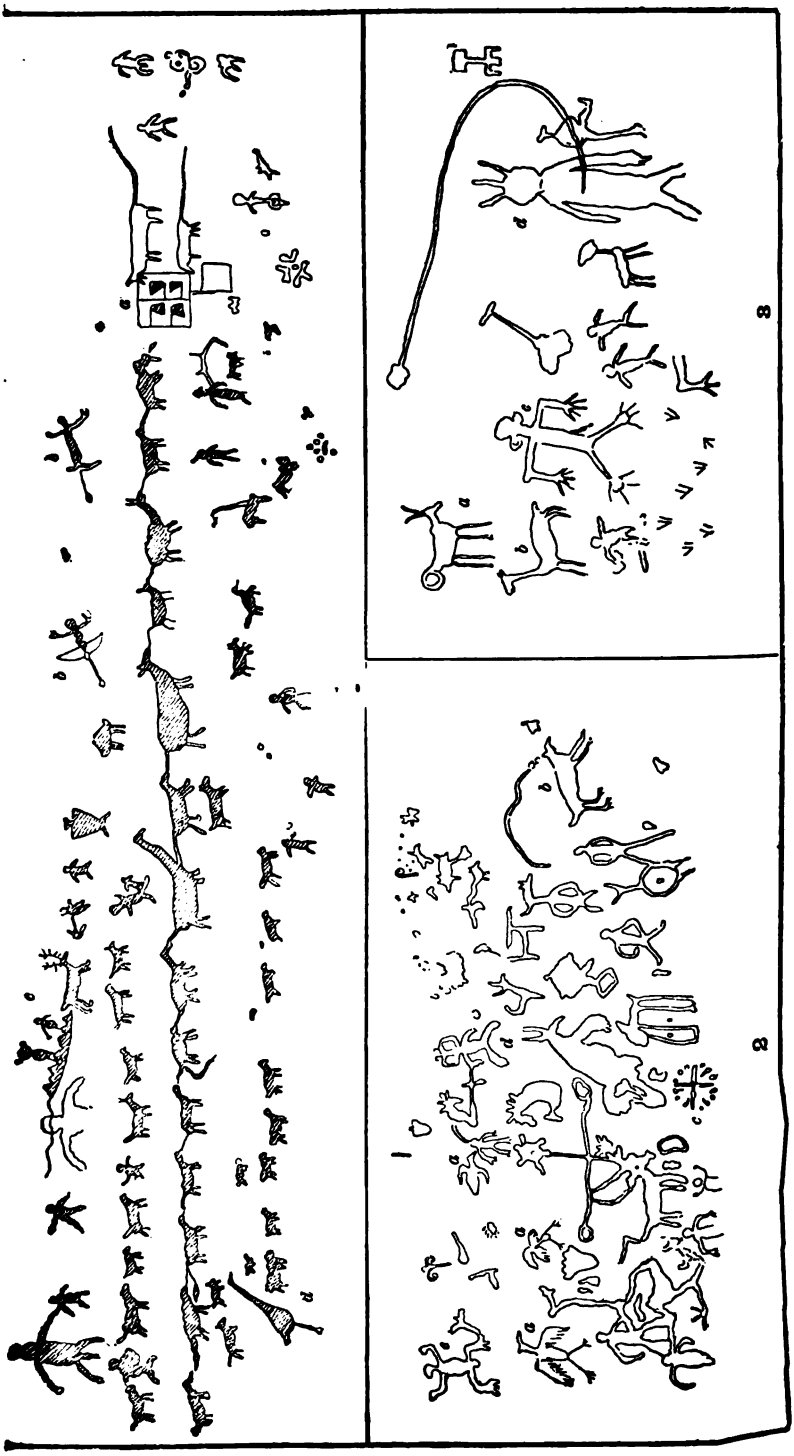

PLATE V. Pictographs from the Rio San Juan, New Mexico.

ous line, and in form resemble one living creature about as little as another. Many of the smaller figures above and below are certainly intended to represent dogs, while a number of men are stationed about here and there, as if to keep the procession in order.

As to the importance of the event recorded in this picture no conclusions can be drawn; it may represent the migration of a tribe or family, or the trophies of a victory. A number of figures are wanting in the drawing at the left, while some of those at the right may not belong properly to the main group. The reduction is, approximately, to one-twelfth.

THE DATE OF THE LAOCOON GROUP.

The interest which centres in this famous group of sculptures is world-wide and unflagging. Pliny declared that in his day it was regarded as excelling all other works, whether in painting or sculpture, and within the last century almost a literature in itself has grown up about it. Its resemblance to the famous description in Virgil, at once raises the question whether the artist imitated the poet, the poet the artist, or neither was aware of the other's work. Settle the date at which the group was produced, and one part of our question disappears. Pliny tells us that it was the work of Agesander, Polydorus and Athenodorus, the Rhodians, and adorned the "house" of the emperor Titus, but gives no further clue. Lessing argued on æsthetic grounds that the sculptors might have drawn their ideas from Virgil, and would have been compelled by the necessities of art to introduce such deviations from the poet's description as are easily noted in comparing the two, especially that the poet describes the serpents as slaying the sons first and then the father, while in the last supreme moment they rear their heads high above him; the artists, on the contrary, bring all together within the serpent-folds, while their fangs are fixed in the sides of the younger son and father. On the other hand, Lessing regards the supposition that Virgil imitated the artists as incomprehensible, since he could see no reason for the deviations of the poet if he had the model before him, as the picture presented by the group was perfectly adapted for poetic treatment and eminently beautiful in itself. Such evidence would, of course, bring the group later than the poem, and he inclines to throw it into the period of the Cæsars, as against Winckelmann who assigned it to the age of Alexander the Great, on the ground that no other period could have produced so consummate a piece. Goethe also handled the subject with wonderful beauty of analysis, among other things advancing the opinion that the

elder son on the father's left must be viewed as possibly escaping with his life. One serpent has grasped him about the right arm at the elbow, and the other around the left ankle, which is raised to free the hand that is struggling to throw off the coil. Gœthe's hypothesis has since been found to have the support of an expression in the Iliu-Persis of Arctinus, who says that only Laocoon and one of his sons perished. Prof. Kekule has recently reviewed the subject and seems to have fixed the date of the sculptures on a sound basis. For this he relies on two sources of evidence, a series of inscribed bases of statues found in Italy, bearing the name of a sculptor, Athenodorus, and a comparison with the sculptures on the altar-frieze of Pergamus, lately recovered and now removed to Berlin. The inscriptions contain such indications of the parentage of the sculptor as to show that he is the same, who with his father, is said by Pliny to have executed the Laocoon group, and the forms of the letters, compared with others of known dates, yield the date of about 100 B. C., and this is also confirmed by the reliefs from Pergamus, especially by the head of the dying giant figured in the ANTIQUARIAN, January, 1883, p. 78, which in feature and attitude resembles that of Laocoon, but is plainly earlier. Hence the artists could not have copied from Virgil, and as the latter was never in Rhodes, he cannot have seen the group. Rhodes, however, was so frequently visited by the Romans of his day for study in the rhetorical schools, that it is hardly conceivable that so noticeable a group should not have been described to the poet by some of his friends, and thus have exerted a strong influence in moulding his description of the scene.

A. C. MERRIAM.

Prof. F. W. Wright has been publishing some articles on archæology in the Chicago *Advance*. These articles are of popular interest, but are decidedly defective in a scientific point of view. In speaking of the animal mounds of Wisconsin, the author has mentioned the Pishtaka river, when he should know that there is no such river in existence. He speaks of "flying dragons," measuring 200 feet from tip to tip of their wings, and other mounds resembling alligators, lizards, etc., situated at Big Bend. There are no alligator mounds at Big Bend, and flying dragons exist only in imagination. The trouble with the description is that Prof. Wright has taken a book written thirty years ago as authority, and has not followed recent investigations with sufficient care. The recent re-publication of this description in the *Kansas City Review*, shows how an error will be spread, especially if it has some popular interest.

RECENT DISCOVERIES.

A CROWNED MUMMY. The Panama *Star and Herald* states that a laborer in the neighborhood of Bogootawa was ploughing, and ploughed up a mummy, covered with numerous gold ornaments, the most important of which was a large collar. The body was covered with a sort of golden mail, from the waist to the hips. The wrists, arms and ankles were encircled with gold bands. A crown was on the head and at the side of the body a kind of scepter was deposited. The body is said to be in an excellent state of preservation, and the stone covered with hieroglyphics. The ornaments were sold for about $10, but the scepter and crown were stolen. We give the account for what it is worth.

SIX FOSSIL HUMAN BODIES IN A COAL MINE. "Nature" reports the discovery of a cavern in a coal mine in Calais which contained six fossil human bodies, and the remains of arms and utensils in petrified wood and stone. A second cave contained eleven bodies of large dimensions, several animals, precious stones and other objects. The walls were decorated with designs of combats between men and animals of gigantic size.

THE KANAWHA MOUNDS. The Charleston *Call* has the following interesting account of the opening of a big mound in Kanawha county: Prof. Norris, the ethnologist, who has been examining the mounds in this section for several months, the other day opened the big mound on Col. B. H. Smith's farm, six or eight miles below here. This is the largest mound in the valley, and proved a rich store house. The mound is fifty feet high, and they dug down to the bottom. It was evidently the burial place of a noted chief, who had been interred with unusual honors. At the bottom they found the bones of a human being, measuring seven feet in length and nineteen inches across the shoulders. He was lying flat, and at either side, lying at an angle of about forty-five degrees, with their feet pointed towards the chief, were other men — on one side two and on the other three. At the head of the chief lay another man, with his hands extended towards him, and bearing two bracelets of copper. On each side of the chief's wrists were six copper bracelets, while a looking glass of mica lay at his shoulder, and his gorget of copper rested on his breast. Four copper bracelets were under his head with an arrow in the center. A house twelve feet in diameter and ten feet high, with a ridge-pole one foot in diameter, had been erected over them, and the whole covered by the dirt that formed the mound. Each of the men buried there had been enclosed in a bark coffin.

"The copper bracelets which we have mentioned before are quite large, weighing three or four ounces each. Twenty of these bracelets were found in the valley, eighteen of them in the big mound on Colonel Smith's farm. Flint knives and spear heads he has found in great abundance, all those that he got from any one mound being alike, but not like the ones he found anywhere else.

In the mound on the Creel farm, which was opened sometime since, Prof. Norris found what he says he has seen nowhere else, and what he declares to be of more interest to him than anything else found in this section. In this mound were fourteen cisterns, round in shape, from nine to sixteen inches in circumference, and four or five feet deep. They were made of some kind of cement that is still hard, and remains to this day impervious to water. In all of these cisterns water was found, some of them full and others partly full. The cisterns had been made in pairs, and there was evidently one pair for each person buried in the mound. These cisterns were at the bottom of the mound, and as the mound was water proof, and the cisterns also water proof, the water found in them must have been some that was put in, centuries ago, to quench the thirst of the weary travelers in their great journey to the land of the hereafter."

A TEMPLE IN A MOUND — The great mound in Kanawha county, W. Va., is 540 feet in circumference and 85 feet high, covering about one acre. A shaft was recently sunk to the crypt in the center, the dome of which was covered with several feet of broken rock. Here two skeletons were found, and by their sides several lance-heads, fragments and entire vessels of pottery, and a quantity of charcoal. The largest skeleton lay with its head to the west and the other to the east. Twenty feet deeper the remains of a temple, twelve feet square and ten feet high, were found, its roof being composed of oak logs, twelve inches square. In the center of the temple was a sacrificial altar, and by it another skeleton seven feet six inches long,

and nineteen inches across the chest. It wore a copper breast-plate nine inches square, had six copper bracelets on each arm, and had four copper bands around the forehead. On the left shoulder were three plates of mica about eight inches square. At some distance another skeleton leaned against the wall, in a standing position, within the temple were gathered several dozen lance-heads, and a number of earthen vessels. No trace of iron was found.

NOTES ON CLASSICAL ARCHÆOLOGY.

EDITED BY PROF. AUG. C. MERRIAM.

THE BULLETIN, issued by the Archaeological Institute of America, contains the report of Professor Goodwin of Harvard College, director of the school for 1882–3, and tells the story of the establishment of the school at Athens, and the first year's work, besides making several suggestions in relation to the future of the school. A house was hired at Athens about the first of October, 1882, for the director, containing a large room fitted up for a library and study, in which meetings were held two evenings in the week for the reading of papers and consultation, and where the students could do their work. A small working library was gathered during the year by purchase and donation, and the school was carried on with seven regular students, graduates of our colleges, who devoted themselves to a variety of subjects, as will be seen by the titles of their theses which were submitted at the close of the year, as follows: *The Pnyx*, J. M. Crow; *The Erechtheum*, H. N. Fowler; *The Life, Poems and Language of Theocritus*, P. Shorey; *The Inscriptions Discovered at Assos*, J. R. S. Sterrett; *The Value of Modern Greek to the Classical Student*, F. H. Taylor; *The Theatre of Dionysus at Athens*, J. R. Wheeler. During a portion of the year, F. E. Woodruff and L. Bevier were connected with the school. The antiquities of Athens served as a special subject of study, and excursions were made to historic sites in the vicinity. Dr. Sterrett visited Assos in the spring, and afterwards joined J. M. Ramsay in his tour through Asia Minor in search of inscriptions and antiquities, many of which have been discovered by them.

The director urges the endowment of the school with $120,000, in order to insure its permanence and relieve the twelve or fourteen colleges of the burden of its support, and to provide for the appointment of a permanent director whose experience by residence shall enable the school to place itself on a par with those of France, Germany and England. So long as no excavations are to be undertaken, the present system of sending out a professor each year from some college is good, as presenting a coveted opportunity to the appointee of spending six months in the very heart of Hellas. But if the school is to do such work as the very fact of its establishment demands, its head must not be changed every year. Professor Goodwin points out that there are two classes of students in the school: First, such as come to make Greek architecture, art, or antiquities a special study; and secondly, such as are general students of classical antiquity, who desire to infuse themselves with clear and definite notions of Greek geography, climate, monuments, atmosphere, and the thousand and one little things which round out a collegiate education, and fit the mind for a better understanding of the antiquity about which the student proposes to teach. Years of experience with books can but little compare with a half year's residence on the spot, and no student who intends to become a classical teacher can fit himself better for his task than by taking advantage of the opportunity here offered. A. C. M.

AT ATHENS the finds consisted of inscriptions, architectural remains, sculptures, and objects in bronze and terra cotta. A part of these were archaic, and a part of good style, as some of the inscriptions were in the old Athenian alphabet, others in the Ionian, introduced by the Archon Euclides, B. C. 403. The archaic objects were found in the lower part of a stratum 5.80 metres thick, along with marble chippings and building stones. All were more or less broken. In the layer of earth above them occurred the objects of later epochs, some even of Christian times. It is supposed that the chippings and archaic remains were all thrown there together after the rebuilding of the Parthenon which followed the destruction caused by the Persian invasion, being used simply for filling in, although some were originally consecrated as offerings. About thirty fragments of sculpture are enumerated, almost all of which bear traces of painting in various colors. Among the remnants of a group, consist-

ing of a driver mounting a chariot, all the nude parts of the charioteer are painted a reddish color, the hair and beard black, tunic white, chariot red, while on the horses are traces of a deep green. Two sphinxes, of which, one still retains a re-curved wing, have the typical archaic smile, and a figure of a woman is noticeable for the peculiarity of the hair. This is parted in the middle and descends in waves to the temples, and, leaving the ears uncovered, falls to the breast in three curls on each side, two of which are wrought free so as not to touch the face at all.

PROF. SAYCE, of Oxford, is taking advantage of the opportunity afforded by the English domination in Egypt to make a journey through some of the less known districts of that country. He is to travel with mules and tents quite off the beaten track, through the Delta and the outlying parts of the Fayum, and will also visit a part of the hitherto unexplored eastern desert. Some interesting results may be expected. In the Fayum, it is to be hoped that he will turn his attention to the questions recently raised by the American traveler, Mr. F. Cope Whitehouse, as to the former extent of Lake Moeris, which Mr. Whitehouse thinks must have occupied quite as much space as described by Herodotus.

DURING the year 1883 the Archaeological Society of Athens engaged in excavations at Epidaurus, Eleusis, Thespiae, Tanagra and on the Acropolis at Athens. Several inscriptions were added to those already obtained from the temple of Aesculapius at Epidaurus, from which in time it will be possible to gain a clearer idea of this curious cult, than has been feasible before from the scattered notices of antiquity. The May number of the *Ephemeris*, published by the society, gives a number of these inscriptions, among which we may mention one in which a certain Eucrates is designated as Purphoros, or priest of the Pamphylian Artemis; another speaks of a dedication to the Zeus of friendship, because of a dream.

A REMARKABLE Mosaic has just been discovered at Nunes, containing more than 150 square feet, and representing a Roman Emperor seated on a throne, beside which stands a female figure. There are also other figures of men, one leading a lion and another a wild boar. A warrior with a Roman helmet completes the group. The work has escaped injury, and the lines and colors are declared to be as fresh as though they dated from yesterday. It is said to be the richest mosaic yet discovered, and will be placed in the museum of the town.

SOLOMON REINACH, formerly a scholar in the French school of Archaeology at Athens, and Ernest Babelon, attache to the Collection of Medals at Paris, have been sent by the French minister of public instruction to the district of Tunis to make a careful exploration of a region in the southern part of the province, and to undertake excavations in various places. They sailed from Marseilles at the close of November.

Mr. Wood, the discoverer of the temple of "Diana of the Ephesians," resumed his excavations upon the same site last spring under the auspices of a committee formed for the purpose, who are convinced that valuable finds are still possible there, notwithstanding the meagre results of the previous excavations. Much time was lost in procuring a fresh firsman, and nothing of importance was found up to June 14th, when work was suspended on account of the heat. It was to be resumed, however, in September, and it is to be hoped that valuable inscriptions at least will reward the discoverer's efforts.

GOLD TORQUES.

The name *torque* is usually restricted to a ring of twisted metal, generally of gold, worn around the neck as a military ornament among several of the nations of antiquity. A familiar example can be seen upon the celebrated statue of a wounded Gaulish warrior, commonly known as "The Dying Gladiator." This kind of ornament was common among the Persians and other Oriental peoples, as well as among the Gauls and Celts of western and northern Europe. From them, as is well known, it was borrowed by the Romans. Sometimes a similar ring was worn around the wrist, or across the breast, and also as an armlet or bracelet. Many such ancient gold objects have been discovered in various parts of Europe, but more of them have been found in Ireland than in all the other countries collectively. The late Sir William Wilde, in his "Catalogue of the Antiquities in Gold in the Museum of the Royal Irish Academy," (p. 71), states that *thirty-seven* specimens of gold torques are to be found in that collection at Dublin. Of those the largest, weighs more than *twenty-seven* ounces (Troy),

and is "the heaviest article of antique manufactured gold in the collection." This, however, is surpassed in magnitude by one now in the National Museum at Stockholm. This was found in 1774, not far from that city, and is one of the largest known to archaeogists. It weighs more than *thirty-one* ounces (Troy). *Montelius'* "*La Suede Prehistorique*," (p. 109). The most remarkable example, however, of all is the one now in the Museum of Bucharest, which was found in 1838, at Buzeo, near Petrossa, in Wallachia. Mr. Isaac Taylor in his recently published work upon "The Alphabet" (vol. 2, p. 211), makes the astonishing statement that this is "of the intrinsic value of about £4,000." This would give it the improbable weight of more than *eighty* pounds (Troy), a greater burden than any man would have cared to wear upon his neck. However, this must be set down to carelessness, as the same author in a previous work, "Greeks and Goths" (p. 7), says that "it formed part of a treasure" of such value found at that place. George Stephens in his "Old Northern Runic Monuments" (p. 567), says that it was found with several objects, many of which had been disposed of by the discoverer, who supposed the metal to be copper, before the authorities interposed and purchased the remainder for eight thousand ducats. The place where the find occurred, was apparently the site of a heathen temple, as upon the torque is an inscription in Runic characters, stating that it was "dedicated to the temple of the Goths." It doubtless came from the spoils of some victory, and from the peculiarities of the letters it is believed to date from the early part of the third century, A. D., when the Goths were fresh from the plunder of Mesia and Thrace. A representation of "The Buzeo Torque," stamped in gold, forms an appropriate ornament upon the cover of the second volume of Mr. Taylor's remarkable work upon the history of the alphabet. HENRY W. HAYNES.

BOSTON, Jan. 22, 1884.

OBELISKS AT ROME.

OF the many forms of Pagan worship which swept from the east into Rome under the emperors, that of Isis and Serapis was among the most prominent. A magnificent temple was erected in their honor within the old Campus Martius, but little was known of it definitely till excavations were made last June, although objects of Egyptian character had been unearthed at various times, among them the obelisk in the Piazza del Pantheon, which was discovered in 1874. It has been conjectured for some time that the temple was situated in the vicinity of the church of Santa Maria Sopra Minerva, not far from the Pantheon. It now is ascertained that the church was built directly over the ruins. Sig. Lanciani began excavations near the church, at the instance of the Archaeological Commission of Rome, and on the 14th of June a sphinx was lighted upon, which is believed to be an effigy of the famous Amasis, King of Egypt, and friend of Polycrates, whom he warned to fling away his most valued possession, in order to propitiate the Nemesis of his uninterrupted good fortune. The Sphinx bore an hieroglyphic inscription which was nearly effaced as if by hammering, and some thought that this might have been due to the iconoclasm of Cambyses. Various other objects of Egyptian antiquity came to light in the same excavations, and on the 17th of June an obelisk, wonderfully well preserved to the very top of the pinnacle, and covered with hieroglyphics from apex to base, was discovered. It is an exact counterpart in every detail of the one in the Piazza del Pantheon, and the two were probably set up in front of the shrine itself, side by side. They are of ordinary Syenite granite, and are inscribed with the cartouches of Ramses the Great. It is supposed that they were removed to Rome probably under Domitian. The latest mention Lanciani finds of the temple is in a poem by Prudentius, where it is stated that in the attempt to restore Pagan superstition made by Nichomachus Flavianus in A. D. 394, worship was celebrated in the Iseum. The reaction which followed upon this outburst of fanaticism is supposed to have proved fatal to the temple, and its objects were thrown down and broken in various ways. At all events, when the destruction came the pavement was still clear, as the sphinx of Amasis was found lying directly upon it. The obelisk, however, remained standing till a considerably later period; for this was found resting upon a layer of rubbish which had accumulated to the height of five feet above the pavement. This circumstance lightened its fall, and served to preserve the monolith entire. The hardness of the granite has also kept it intact till now, although its marble pedestal has been broken up, probably for the rapacious lime-kiln. A curious fact is that the pinnacle and the obelisk must have been seen by the masons who were laying in 1719 the foundations of an adjacent building; for it was found imbedded in their masonry. They could not have understood its value, or else mistook it for some worthless fragment.

THE PALÆOLITHIC MAN.

An article under this caption, has recently appeared from the pen of the President of Boston University, displaying ignorance and strange misconception of the doctrine of the antiquity of man. It is based upon Mr. Petrie's recent interesting study of "The Pyramids and Temples of Gizeh," and is guilty of the absurdity of ascribing their construction to "palaeolithic Africans." Commiseration is pretended for "poor Sir John Lubbock," whose theories, according to the writer, are entirely overthrown by the new light shed upon the question of the history of the building of "these palaeolithic remains." What can be the motive for such an abuse of language as this? *Palaeolithic* is a technical term of science, as strictly limited in signification as is *palaeography* or *palaeology*. As defined in *The Imperial Dictionary* it means "belonging to the earlier stone period of prehistoric history;" and "palaeolithic man" means man living contemporary with the extinct mammalia. So the term "palaeolithic monuments" is universally restricted to those rude structures of unhewn stone, which are found widely scattered over many countries. Yet President Warren not only continually uses the word palaeolithic as synonymous with prehistoric, but he even shows a strange confusion of thought as to the significance of the word prehistoric. What better "history" can we desire than that carved in stone upon the early monuments of Egypt? One would think that he supposed that "history" is only concerned with the writings of the Greeks and Romans, or supplementary to what is to be found in the Pentateuch! We think, however, that such a perversion of the trut will not be likely to do much harm. "Prehistoric times" in Egypt have no connection whatever with her monumental history; but there is abundant proof that "the prehistoric man," and even "the palaeolithic man" once lived there as well as elsewhere. When this was, how many uncounted ages before the pyramids were built, or the marvelous diorite statue of King Kephren was fashioned, or the beautiful tomb of Ti was ornamented, or the hieroglyphics were developed, "that is the question!" But however long ago it may have been "in the dark, backward abyss of time," the palaeolithic man, a savage hunter, armed with this rude axe of roughly-chipped stone, once dwelt in the valley of the Nile, as well as in that of the Somme. President Warren claims to have "great respect for the palaeolithic man," and can hardly find words to express his admiration for the marvelous skill exhibited by him in fashioning "the prehistoric arrow head." But unhappily in point of fact "the palaeolithic man" was no more capable of making a stone arrowhead than he was of building a pyramid.

HENRY W. HAYNES.

BOSTON, Jan. 19, 1884.

OUR EXCHANGES.

The *Revue de Ethnographie*, published under the direction of M. Le Dr. Hamy, Conservateur du Musee de Ethnographie, Paris. Ernest Leroux, Editeur. This is a splendid journal, and one which we take great pleasure in commending. It has reached the sixth number of a second volume. Each number has something on American Archaeology, and frequently information of a most interesting character may be found in them. Dr. Hamy is an excellent scholar, and seems very partial to American subjects. The magazine is well printed, and is finely illustrated. The price is thirty francs for six numbers; 576 pages.

The *Mining and Scientific Gazette:* San Francisco; Dewey & Co., Publishers. This is one of the best weeklies in the United States. It contains with the usual mining news, a large amount of valuable reading, including frequent articles on the topography, geology, archaeology and natural history of California and the adjoining territories. Its position is always in favor of good morals, and in fact the paper can be pronounced clean in every respect.

The *Kansas City Review of Science and Industry*. Our cotemporary seems very placid in view of a successful career. We hope no shadow will ever come over his prospects, he evidently has a mission, and already has accomplished much for science and literature by his versatile talent and cheery spirit. Theo. S. Case, Editor and Publisher.

Panjab Notes and Queries. A monthly periodical, devoted to the systematic collection of authentic notes and scraps of information regarding the country and the people. Edited by Captain R. C. TEMPLE, F. R. G. S., M. R. A. S., M. A. T., etc., Bengal staff corps. Publishers: The Pioneer Press, Allahabad.

This valuable journal is a quarto containing twelve pages in each number, made up wholly of short fragmentary articles or notes contributed by different persons or extracted from native authors and arranged according to the subjects as follows: Religion, Social Customs, Folk Lore, Castes and Tribes, Language and Miscellaneous. The price is $2.50. It seems to be a collection of the odds and ends of archaeological studies; and for the Oriental scholar furnishes many suggestive hints. What we would be glad to see in such a journal would be a continuity. This continuity might appear in successive numbers. For instance the divinities of the Panjab might be described from time to time in such a way that readers would look for the next number to supplement the information furnished previously, and so with Folk Lore and other subjects. Still the particular form in which the journal is conducted has its advantages, especially as it supplements the work which is accomplished by the Calcutta Review, the Indian Antiquary and other works.

Capt. Temple is an indefatigable worker and has a large field to work in, and is bringing out a vast amount of original material. In addition to this he has published the "Legends of the Panjab," six numbers, "A Dissertation of the Proper Names of Panjabis," "The Lord's Prayer," "A Brief Exposition of a Theory of Universal Grammar," "Some Hindoo Folk songs from the Panjab" reprinted from the Journal of the Asiatic Society, of Bengal, and several other works. The "Notes and Queries" are the chips from his workshop.

BOOK REVIEWS.

The Manners and Customs of the Ancient Egyptians, by Sir J. GARDNER WILKINSON, D. C. L., F. R. S., F. R. G. S. A new edition, revised and corrected, by Sam'l Birch, LL. D., D. C. L., keeper of Egyptian and Oriental antiquities in the Brtish museum, etc., in three volumes, with illustrations. Boston: S. E. Cassino & Co., 1883.

It has been our dream that we should sometime own Wilkinson's Egypt. The dream has been fulfilled, and we would inform our friends that "there is corn in Egypt." The fact that a book of this kind, so nicely illustrated and so splendidly printed, containing Wilkinson's unabridged, for the sum of $15.00 is certainly a cause for congratulation. We are happy to call attention to the work, and we hope and believe that the work will meet with a ready sale. Criticism would not be in place here for Wilkinson is so well known that criticism would seem presumptuous. The only suggestion which we would make is, that the additions to Wilkinson's work from the pen of Dr. Birch would (in our opinion) have been better if they had been published as supplementary notes at the bottom of each page, instead of having been incorporated in the body of the text. As they are, they break the flow of Wilkinson's style which is his greatest charm and hamper the interest in reading the book. They, however, bring the information down to the latest date, and are very scholarly and perfectly reliable. The cuts in this American edition are wood cuts, fairly done and colored lithographs, but no steel engravings. The likenesses and figures are, however, very correct, and the illustrations may be regarded as very satisfactory. They are very numerous, scarcely a page in the book being without some wood cut. Cassino & Co. have laid the American public under great obligations in thus publishing so magnificent a work at so cheap a price.

The Boundary Disputes of Connecticut, by CLARENCE WINTHROP BOWEN. Boston: J. R. Osgood & Co. 1882.

This is a magnificent book printed on fine tinted paper containing a photograph of John Winthrop as a frontispiece and maps, charts and diagrams scattered throughout the pages. Rufus Choate, sarcastically says of the boundaries of Connecticut, that the commissioners might as well have decided that the line between the state was bounded on the north by a bramble bush, on the south by a blue-jay, on the west by a hive of bees in swarming time, and on the east by 500 foxes with fire-brands tied to their tails. England and Holland first claimed the land now called Connecticut.

The next controversy was with Massachusetts. The council of Plymouth divided the sea coast of New England among themselves. The colony of New Haven claimed a separate territory. Next the Mohicans came in for their territory. Then arose a dispute about Long Island. The disputes between Connecticut and Rhode Island were the most prolonged. Then controversies continuing up to 1830 with Massachusetts. Then disputes between New York and Connecticut from 1664 to 1731. Then the claims of Connecticut to western lands and a final settlement between New York and Connecticut in 1880. Mr. Bowen has reviewed all these points and has given an excellent resume of the history. The book is a valuable contribution and worthy a place in every library.

Old English History, by EDWARD A. FREEMAN, with maps. London: MacMillan & Co., 1883.

The names Great Britain, England and Scotland, have a history in themselves. Three races, it appears, have given these names, three peoples have mingled their blood and three languages still exist on the British Isles. The records of the early advent of these races and their subsequent history is the object of the book whose title we give. Nothing can surpass the charm which this early history has. Mr. Freeman is a master in the field and tells the old story with a freshness which makes it seem new. His book is designed for juvenile readers, but has a value for those of mature age. The review is most comprehensive, but notwithstanding its condensation, the book is interesting. The maps alone are worth the price of the book. They are maps of England in the fourth, the seventh, the ninth, the tenth and the eleventh century.

Historical Sketch of Explorations in Minnesota, by N. H. WINCHELL, From the final report of the Geological and Natural History Survey of Minnesota, Minneapolis; Johnson, Smith & Harrison, 1883.

Minnesota Explorers and Pioneers, from A. D. 1639 to A. D. 1858, by the Rev. EDWARD DUFFIELD NEILL, President of McAllister College; Minneapolis North Star Publishing Co. 1881.

These are magnificently printed books showing that in this line of art the enterprising city of the north has outstripped many an older place. It has heretofore been one of the embarrassing hindrances to literary work at the west that when a production of the brain came to be presented to the public, it was at once trammelled by the lack of publishing houses which could undertake the task of putting it into an attractive shape and follow the careful investigation with equal care in type setting. This difficulty has evidently been removed from before our fellow-workers; and we congratulate them on this privilege. Cartography too, we have been accustomed to believe, was an accomplishment which only eastern houses could successfully undertake, but we have in Prof. Winchell's report several reproductions of old maps which cannot be surpassed. The most attractive of these are two reduced for the report from Nicolet's maps of 1842. There are, however, other maps in the volume. These have the merit of originality in that they are copies of tracings, now in the archives of the Minnesota Historical Society. These are as follows: The map of Franquelin, prepared for Louis XIV, in 1688; a chart printed in 1737; Buache's map, of 1754; Hennepin's map, of 1683, and DeLisle's, of 1703. The oldest map of the region west of Lake Superior, is one traced by a chief of the Assiniboines in 1730. This map was sent to Paris and deposited in the *Archives de la Marine*, and has been produced from a facsimile. All of these maps deserve a fuller notice than we can now give them. The last named tracing is a very valuable contribution, for it gives not only the earliest recorded picture of the rivers of this region, but illustrates the knowledge of the natives concerning geography, and their skill in imparting that knowledge on paper. The maps are all useful, not merely for the purposes of history which they are here used to illustrate, but as aids in fixing the localities of the Indian tribes of this region in prehistoric times. Prof. Winchell, in his historical sketch goes over the same ground which President Neill had previously traversed. The most thorough investigation has been made by Mr. Neill, and credit is due him for having first entered upon the field. Another excellence in the volume prepared by this well known author is that his history is given in a very clear and interesting style. Everything is simplified even to the pronunciation of names, which are given in brackets. The two volumes will go together; perhaps a third volume would make the maps more intelligible, and add to the value of the material furnished. The earliest explorer of Wisconsin was Jean Nicolet, who was trading at Green Bay, as early as 1634. The first white men in Minnesota were Sieur Crosellieurs and Sieur Radisson, two Hugue-

nots. The former of these came to Canada in 1641, and married the daughter of a pilot, Abraham Martin, from whom "The plains of Abraham" received their name. In the year 1659 these men wintered at Chagouamikon (Bayfield), on Lake Superior. The following spring they journeyed southwest, and reached the sources of the Black, Chippewa and Wisconsin rivers, and spent the next winter in the Sioux villages in the Mille Lacs region. They in the summer of 1660 returned with 300 Indians and sixty canoes loaded with the wealth of skins. Father Menard was the next visitor. He reached a bay on Lake Superior in October the same year, where he found a band of Ottowas. Following this band through all their long wanderings, Menard at last was lost in the woods somewhere in the region of the Black river. His breviary and Cassock were afterwards found in the hands of the Sioux. It is supposed that he was killed by them. The early history of these regions is very interesting and we are thankful that these two sketches have been furnished by so competent historians, and published in so beautiful a style.

Reynard the Fox in South Africa or Hottentot Fables and Tales. Translated from original manuscripts by W. H. I. BLEEK, Ph. D., London: Trubner & Co., 1864.

This little collection of Hottentot Fables was mainly made by a missionary, the Rev. G. Kronlein, of Namaqualand, but prepared by Mr. Bleek, at the expense and by the suggestion of Sir George Grey, K. C. B. The fables contained in it, relate mainly to animals, though occasionally the stars and heavenly bodies are included. The animals referred to are those of the country, such as lions, hyenas, jackals, elands, elephants, and the omnipresent hare. The usual transformations of men and women into animals, and the marriage of stars with human beings are described.

There is one feature of the fables which seems to be characteristic of all African myths, and that is the entire absence of the cosmogonies, and the flood myth. There are serpents mentioned, but no such serpent myths as are found in other parts of the world.

The title of the book mentions the fox, but the animal which serves as the fox is here the jackal.

The collection is not a new one, and yet it is one worthy of notice.

Kaffir Folk Lore. A selection from the traditional tales current among the people living on the eastern border of the Cape Colony, by Geo. MCCALL THEAL, London, W. Swan, Sonnenschein & Co., Paternoster Row, 1880.

The traditions and fables of the Kaffir tribes resemble those of the Hottentots in many respects, and only differ from them in having more of human action and less of the animal fables. There are, however, several which describe human beings as having animal bodies and one myth resembles the Mandan story of the serpent husband, though it differs enough to show that no historical connection ever existed but merely a similar conception of the native mind. There is, however, a myth in the two collections, which evidently did come from proximity to the Hottentots, namely, the story of "The hare which got the fat."

Mr. Theal's book is much the most elaborate of the two, and refutes to a certain degree the position taken by Mr. Bleek, that the Hottentots are the more intelligent of the two races. Judging from the mythology given in these two books, we should say that the Kaffirs were more advanced in mental attainment than the Hottentots.

It is, however, worthy of remark that the same characteristics appear in the mythologies of both races, namely, the transformations of nature powers and animals into human beings and the mingling of all in tribal and domestic life. The publishers, Sonnenschein & Co., have given the public an attractive book.

Folk-Lore from Kashmir. Collected by Mrs. F. A. STEEL, with notes by Lieut. R. C. TEMPLE. Reprinted from the *Indian Antiquary.*

The Folk-Lore from Kashmir differs from that of the Kaffirs, Hottentots and Mayas in that it contains a greater number of fairy tales and more burlesques on human deformities and peculiarities. Whether this is owing to the later stage of development of the mythology of Kashmir, or to peculiarities of the human mind, we are not able to say.

The Legends of the Panjab, by Lieut. R. C. TEMPLE, Bengal Staff Corps. No. 1, August, '83; No. 2, September, '83; No. 3, October, '83; No. 4, November, '83; No. 5, December, '83; No. 6, January, '84. London.

The Legends of the Panjab, as collected by Capt. R. C. Temple, are perhaps the most valuable of all this collection of Folk Lore which we are reviewing. It is well,

however, to read them in connection with the others, and compare. The same transformations which we have noticed in the other myths are here prevalent, but much more elaborate. The serpent, figures more conspicuously. Giants are also brought into the scene; but there is the description of goldsmith's ornaments, of palaces and other peculiarities of civilized society, showing that these myths are transformations; and of wonderful exploits and fabulons creatures have here survived late into historic times. Capt. Temple is a very industrious and thorough scholar, and has done grand service in thus collecting the legends of the far east. His collection promises to be a very valuable and extensive one. Many of the legends were collected directly from the wandering Bards of the Panjab, and are here printed for the first time.

The History of the Religion of Israel. An Old Testament Primer. By CRAWFORD H. TOY, professor of Hebrew language and literature in Harvard University. Boston: Unitarian Sunday School Society, 7 Tremont Place. 1882.

Although Professor Toy's History of the Religion of Israel is published by the Unitarian Sunday School Society, the author is a member of the Baptist denomination. Ranking, as he does, among the very first Hebrew scholars of the country, his work will be understood to present the results of the most solid scholarship, and at the same time to be wholly unsectarian. The view here taken of the history of the Hebrew religion is that of what is known as the "Dutch School," of which Professor Kuenen is the most distinguished exponent, and Professor Robertson Smith (a Presbyterian) the most prominent representative in Great Britatn. The leading tenet of this school is that the Jewish ritual, described in the so-called books of Moses, marked not the beginning, but the end of the development of the national religion; that these books were as a whole not the work of Moses or of his age, but of the period after the Babylonian exile, and are to be associated especially with the name of Ezra; but that at the same time they contain very genuine traditions, and some genuine fragments of the early period, while the book of Deuteronomy—the earliest of the five—is in the series the book of the law discovered in the reign of King Isaiah, which served as the foundation for his religious reform. Of course the book before us does not attempt to give the arguments by which this view is supported; but it contains a lucid and coherent account of the successive steps by which, in the author's opinion, the Hebrew religion was developed, aud the Pentateuch took the shape in which we know it. F. W. A.

Library of Aboriginal American Literature, No. III. Edited by D. G. BRINTON, M. D. Philadelphia: 1883. "The Gueguence," a comedy ballet in the Spanish Nahuatl dialect of Nicaragua.

Aboriginal American Authors and Their Productions, especially those in the native languages. A Chapter in the History of Literature, by DANIEL G. BRINTON, A. M., M. D. Philadelphia: 1883.

These two works, following closely on one another, show how industrious Dr. Brinton is. The rapidity of his pen does not, however, prevent a most careful and thorough investigation. The resources from which he draws are, a valuable library of which he is a fortunate possessor and the many libraries to which he has ready access. Few authors are so well acquainted with the aboriginal literature of America. The Book of Comedy is comparatively recent, but it indicates very considerable literary ability. The translation of it covers about 60 pages, and with an introduction and notes, makes a neat volume of ninety-two pages. The second volume mentioned is less pretentious in appearance, but is perhaps the more valuable of the two. It is the substance of the paper read by the author at the Congres de Americanistes at Copenhagen in 1883. The two books reveal a wealth of literature which is quite surprising in a race as rude as the American evidently was.

The Composition of Indian Geographical Names. Illustrated. From the Algonkin languages, by J. HAMMOND TRUMBULL. Collections for the Connecticut Historical Society, Vol. II. Hartford: 1870.

Indian Names of Places on the borders of Connecticut, with interpretations, by J. HAMMOND TRUMBULL. Hartford: 1881.

Mr. Trumbull is one, and the only one, who can tell us about Indian names in Connecticut. There are not half a dozen men in America who pretend to any scholarship in the native languages. Mr. Trumbull is one of these half dozen. His studies have been mainly in the line of geographical names. The two works mentioned above are the result. The one is a revise of the other, published ten years apart.

It appears that Indian names are mainly descriptive of the objects of nature, either some topographical feature, some natural product or some animal which resorted to the place. Occasionally, however, a battle, feast, or sachem's residence, will be indicated. "Great bends," "forks" and "water falls," are also common. Adjectives go with these names as with us. Nouns are found with locative suffixes, and verbal expressions, such as "going by boat," etc., are used. The great barrier to a correct understanding of local names is the corruption which has taken place. Sometimes a sound has suggested an entirely different word, as "Potopaco," "Port Tobacco" and "Musquetohaug," "Musqueto Hawk." Sometimes syllables are dropped and so the original is lost. Sometimes also English spelling varies and many other causes for obscurity appear. All these, however, have failed to hide the names from our "Musquito Hawk." Here is where the ten years of study comes in. Mr. Trumbull is as keen on the scent for an Indian name as an English hound for a fox. A grand good work has been done, for which the scholars should be grateful.

Ancient Greek Testaments, a critical bibliography of the Greek New Testament, as published by ISAAC H. HALL, Philadelphia, Pa., 1883.

Prof. Hall has given an interesting sketch of the history of printing Greek Testaments in America. The first Greek Testament printed in America was printed by Isaac Thomas, at Worcester, Mass., in 1800. This Greek Testament was a reprint of Mills, of Oxford, 1707. Previous to Mills there were in England, Stevens' of 1550, Bea's of 1565, and the Elzevir of 1768. The difference between the dates would indicate the difference between Europe and America in the art of printing and in critical learning.

Corea, the Hermit Nation, by W. E. GRIFFIS. Charles Scribner & Sons, New York.

Mr. Griffis is the author of an interesting book, called the Micado's empire, the result of personal observation in Japan. This book is a compilation, but grew out of the interest which he felt in Corea while a resident of the island. The early history of Corea is given, a description of the country and its inhabitants, with some of the traditions and religious notions, religion, folk-lore, social organization and customs of the people. Corea is inhabited by a race that is not aboriginal. Kitsze is the traditionary founder of the kingdom and ancestor of the people, an emigrant from China. He was one of the authors of the Shoo-king, the dynasty of which he, as the head, reigned from 1122 B. C. The Great Wall of China was built 255 B. C., and his dynasty lasted until about this date. The Fuyu race followed 25 B. C. to 190 A. D. Their arms were bows and arrows, swords and lances. They were dwellers in cities which were surrounded by Palisades. The dead bodies of criminals were exposed on mounds. The Fuyu religion was a worship of Heaven. The Fuyu chiefmen or rulers were named after the beasts. They were the first nation to emerge from barbarism. They sacrificed to Heaven and to the spirit of the land and of the harvest, to the morning star and celestial powers. In their burial customs they made a cairn and planted fir trees around it. In 372 Buddhism was introduced. The alphabet was invented in the eighth century. It was based on the Sanskrit alphabet though it expresses the sounds or phonetic value of certain Chinese characters which are ideographs expressing ideas but not sounds. The Sanskrit alphabet suggesting the model for the manner of use of the characters. It is believed by many that the Coreans and Choctaws have the only two perfect alphabets in the world.

This alphabet was the work of a statesmen and scholar named Chudghong. The effect of it has been to stereotype the sounds of Chinese words which were extant 1000 years ago. The Corea and Japanese are closely associated in their mythology. The remarkable crocodiles and sea monsters from which the gods and goddesses are born and into which they change, the dragons and tide jewels and the various mystic symbols which they employ to work their spells, the method of divination and systems of prognostics, the human sacrifices and the manner of their rescue seem to be common to the nations on both sides of the Sea of Japan and point to a common heritage from the same ancestors. The carved dogs which were on exhibition at the Centennial with wide-open mouths, hair curled in tufts bifurcated at their upright ends, are called "Corean" dogs, and imitate the Golden dogs which guard the throne of Japan There are many other points of interest in the Corean history but we must refer our readers to the book.

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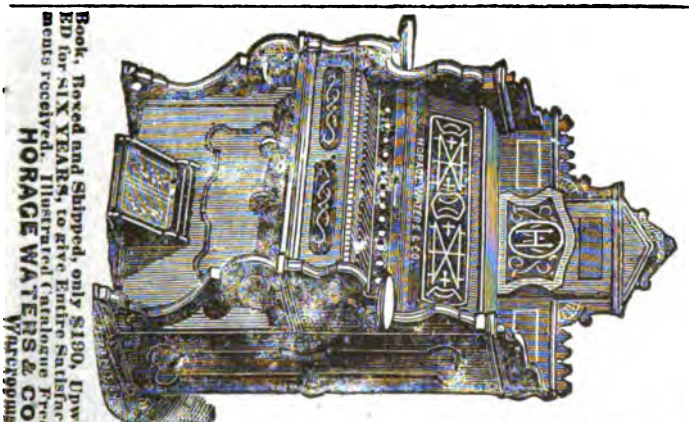

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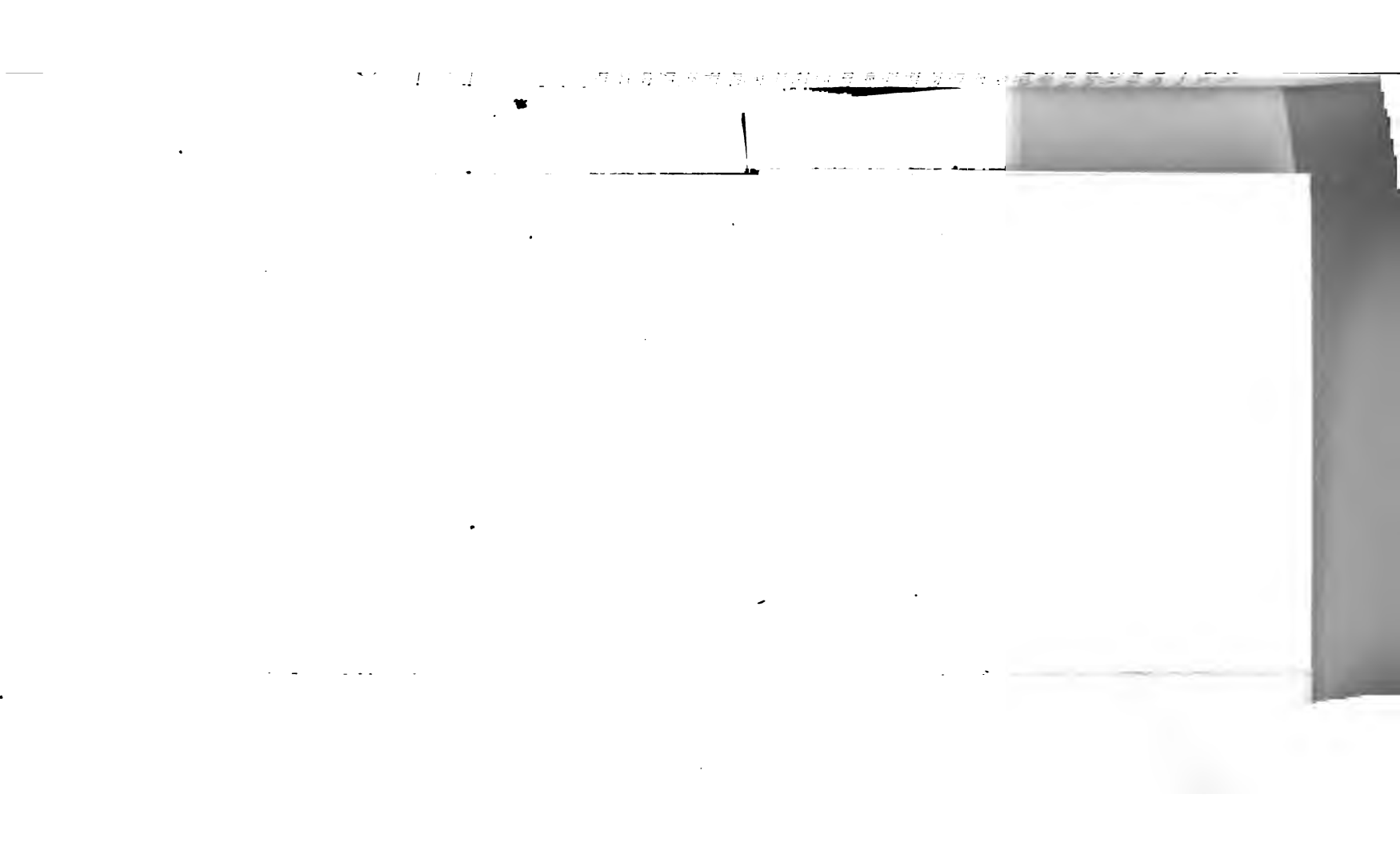

THE

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THE BRIDGES OF ANCIENT ROME.

Among the Romans, bridges were regarded as religious monuments.* The importance attached to their construction and care was such that the duties of bridge builders were assigned to a fraternity of priests called *pontifices*. The title of *Pontifex Maximus* was that of the high priest of this order; a dignity which was, in imperial times, conferred on or assumed by the emperor. This title is at present attached to the office of the pope, while the highest college of priests in Rome is but a development of the *pontifices* of antiquity.

In the construction of bridges the Romans were far in advance of all other contemporaneous nations. This was in the main due to the extraordinary development which the principal of the arch underwent from the time of its introduction into Rome by the Tarquinii.† From the primitive arch, consisting of two boulders meeting at an acute angle, to the "glory of ancient masonry," the round arch, is a wonderful advance, the credit of which is due solely to the Romans. Through their assiduity the arch reached its highest possible perfection, and their service to the progress of the art of construction cannot be too highly estimated. This is not true of any other nation, for neither the Assyrians nor the Egyptians, to whom the principle of the arch, both round and pointed, was known, employed it except on a very moderate scale.

Very naturally the construction of bridges was one of the first arts to which the Romans applied the principle of the arch. Although of great importance, the stone arch was not indis-

* Pliny Nat. Hist., XXXVI, 15, 100. Dionys. III, 45.

† Livy, I, 38, 56. Dionys. III, 67, IV, 44. Pliny. Nat. Hist., XXXVI, 15, 24.

pensable in bridge construction. Bridges had been constructed of wood, and, for the time, served the purpose well, but the frequent inundations of the Anio * and Tiber demonstrated the impracticability of the numerous piles necessary for the support of the superstructure; this, together with the increase of commerce and navigation, led to the use of the arch alone in bridge construction. This was a new departure. Naturally the beginnings were rude; principles must be mastered and obstacles overcome. But by experience and observation the knowledge of certain proportions was attained, which, at the outset, were fluctuating and uncertain. In time, mere necessity was lost sight of, owing to the latitude in form and style, arising from a bountiful supply of building material. Finally, by attending to the wants and tastes of civilized society, the art of stone bridge building was carried to its highest state of development.

It is to be regretted that no record has been left us of the methods employed in building the early Roman bridges. Even Vitruvius has not in the slightest degree alluded to the subject. The silence of ancient literature upon so interesting a topic is undoubtedly due to the fanatical care and jealousy with which the *pontifices* guarded the secrets of their order. Like the "brethren of the bridge" of the middle ages, they would permit no interference with their own peculiar duties, and punished with death any disclosure on the part of their members. They kept no record of their engineering devices. Their plans and expedients were handed down from member to member by tradition, and on this account we are compelled to depend for our knowledge of their methods upon surmises resulting from the examination of their constructions.

These ancient bridges are generally constructed of a very hard quality of stone. The species in the neighborhood of Rome being of a very soft and friable nature necessitated, in works of importance, the use of two kinds of stone known as Volscinian and Tiburtine. These were transported at considerable expense from the quarries near Tibur, and the borders of Tarquiniensis. It is curious to note the care with which the ancient Romans prepared the stone for their buildings.† Two years were allowed to elapse between the extraction of the stone from the quarry and its use for building purposes. In the meantime the stone was exposed to the action of the weather. That which at the expiration of the test still retained its firmness and solidity was used for superstructural work, while that which had been somewhat impaired was used in foundations. This latter seems hardly consistent with good modern practice, but as Roman foundations were in general constructed of concrete or piles, with a "filling" of broken stone, perfection of material

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* Or Teverone. † Vitruvius.

was not necessary, and we are led to look upon the expedient as but another illustration of Roman economy.

In laying foundations for bridge piers, Roman engineers employed either caissons or cofferdams, and where the bed was composed of sandy or loose material, alder, olive or oaken piles were driven with a machine. Sometimes irregular masses of brick were used to consolidate marshy and movable soils. These blocks were formed by hand or mallet and resembled rude cylinders or irregular cones. Piranesi in his discussion of the Ponte S. Angelo* advances the theory that in its foundations a complete system of inverted arches was used to overcome the obstacle of movable ground. This plan is ingenious, but the author himself was not convinced of its genuineness.

In connection with the masonry, great stress was laid upon the cement or mastic used. River or pit sand and puzzolana mixed with lime, formed the most valuable and durable mortar. Sea sand was condemned owing to its quality of retaining moisture for a considerable period.† In places where the masonry was to be subjected to shocks not only was mortar used, but the individual stones were bound together by straps of iron.

With but few exceptions, the arch employed in Roman bridges is semi-circular, to which undoubtedly much of their solidity is due. In the construction, frames or centers, supported by projecting stones, were used to give the required form to the arch. In general, one course of voussoirs was employed, over which a mass of rubble, supporting the roadway, was laid. Starlings were used to protect the piers, and care was taken to provide pipes by which to drain the roadway of any water which might accumulate thereon.

In the main, principles which governed stone bridge construction then, appear to be at little variance with those of modern practice. To the Roman design and economical use of material may be traced almost every improvement and refinement adopted by constructors of modern stone bridges. The durability and strength of these Roman bridges, erected in exposed places, is remarkable; many have withstood for centuries the force of violent torrents, and are practically perfect to-day, embodying in their old age the indomitable skill and strength of purpose so illustrative of the genius and character of their builders.

The public works of the Romans were built by slaves, who were condemned, under penalty of flogging, to perform a certain amount of labor every day. Provinces contributed under requirement a certain number of loads of lime every year. Contractors of quarries and proprietors of mines paid a stipulated impost, according to the necessities of the public demand. To these were added contributions from the private funds of em-

* Piranesi Ant. Rom. Tome, 4, tab. 4–14. † Vitruvius.

perors, triumphers and wealthy citizens, all uniting in a just pride in the aid which they were enabled to render to the erection of public buildings. Cities, harbors, roads, bridges, aqueducts and other public edifices were planned, and these in turn, executed, in a manner never yet surpassed. What valuable lessons might have been studied, and what useful knowledge derived from the magnificent structures which the Romans reared, had not the wanton hand of men hastened natural decay.

The first bridge built over the Tiber, of which we have any authentic record, was the Pons Sublicius, unless we credit the story of Macrobius, which claims that Hercules, on his return from Spain, constructed a bridge * upon the site of the Pons Sublicius. Plutarch also states that there was a bridge here previous to the time of Hercules. Therefore it seems not unlikely that the Pons Sublicius was but a restoration of a much older structure. This bridge was the work of Ancus Martius, the fourth king of Rome, and was constructed entirely of wood, thereby obtaining the name Sublicius.† All traces of this interesting structure have most unfortunately disappeared. The stone piers visible at the foot of the Aventine are assumed by some to have belonged to the Sublician bridge, but this seems unlikely, as the bridge was, for superstitious and religious scruples, always constructed of wood and supported on piles. Historical records tend to the conclusion that the bridge was situated between the two points where the Servian wall reached the river. It also seems probable that the site of this ancient structure was north of the Porta Trigemina, for Caius Gracchus, in his miraculous escape, leaped down from the walls of the Temple of Luna in order to reach the Sublician bridge.‡

A very erroneous idea prevails that the Pons Sublicius was at one time rebuilt in stone. This fallacy has doubtless arisen from the comparison by Plutarch of the new Pons Lepideus with the old Pons Sublicius. He evidently sought to describe the former by comparison with the latter, and would hardly have used this expedient had not both structures been in existence at the time. That the two were situated in different places is evident from the fact that the Notitia mentions both separately; and again, if the Pons Lepideus was erected upon the site of the Pons Sublicius, Rome must have been without a bridge for a very considerable time, because the Pons Æmilius or Lepideus was not completed until 142 B. C., thirty-seven years after it was commenced.

This bridge is memorable for its renowned defense against the army of Porsena by Horatio Cocles. After this event it was

* Lib. 1, c. 2.

† A Volscian term, meaning wooden piles.

‡ Livy, XL, 2; Aur. Vict. Vir. III. 65.

repaired, but still in wood, and with movable beams, so that if necessity demanded, it might be quickly removed.* From this bridge the body of Heliogat alus, with a stone around the neck, was cast into the Tiber.

The account of the early history of the Pons Sublicius is very defective, no restorations or other important events in the history of the structure itself being recorded until its final destruction by a great flood in the time of Augustus.†

The next bridge constructed by the Romans, the Pons Palitinus or Senatorius, now distinguished by the title of Ponte Rotto, is opposite the temple of Fortuna Virilis, only a short distance from the narrow thoroughfare in which the latter is situated. This, the first stone bridge over the Tiber, was commenced 179 years before the Christian era by the Censors Marcus Fulvius and P. Æmilius Lepideus, who completed the driving of the piles upon which the bridge was built fifty years later by the Censors P. Scipio Africanus and L. Mummius.

It has been objected that Livy,‡ who relates the history of the bridge, makes no mention of the name of Palitinus. No satisfactory explanation of this omission has been offered, but it is evident from the position as well as from the fact that all the other bridges are accounted for, that the claim to the title is beyond all question.

This bridge is apparently the ancient Pons Æmilius or Lepideus which was injured by the great flood during the reign of Tiberius and by whom it was restored. Tacitus§ tells us that in the time of Otho, A. D. 69, it was again destroyed by a sudden inundation. It remained in ruins a long time and no account of its repair can be found until the time of Antoninus Pius.‖ In 1220 we find it being rebuilt by Pope Honorius III. It was again restored about the year 1552 by Julius II, and thirty years later by Gregory XIII. Finally in the year 1598, during the reign of Clement VIII, the two eastermost of its five arches with their parapets were destroyed by a violent inundation of the Tiber, since which event the bridge has remained in practically the same condition. Of the eastern extremity of the bridge close to the temple of Fortuna Virilis, on the left bank of the river, a very small portion remains; the two pedestals with which the parapet terminated figured for a long time as interesting relics, but the erection of the present suspension bridge from the end of the third arch to the shore necessitated their removal. The scene in this vicinity is much admired. The remains of the bridge, forming a most picturesque ruin, comprises the whole of three arches with the corresponding upper

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* Pliny, Lib. XXXVI, Chap. 23.
† Dio. Lib. 53.
‡ Lib. XL. Cap. 51.
§ Hist. Lib. I, Cap. 86.
‖ J. Capitolinus, 8.

works and parapets in a remarkable state of preservation. A portion of the fourth arch also remains, which launching forth without visible support, has, through the tenacity of the cement, been kept in substantially the same condition for 250 years. The arches consist of one row of voussoirs and an archivolt following the curve of the arch. Ornaments consisting of lions' heads are placed upon the piers, and two admirably sculptured marine horses adorn each arch. The spans of arches are about eighty feet, while the breadth is nearly forty-three feet.

A short distance above the Ponte Rotto is the "Island of the Tiber." According to legend, this island was formed by the corn grown on the Campus Martius, belonging to the Tarquins, which, after their expulsion, was consecrated to Mars. For this reason it could not be used for food, and was cut and thrown into the Tiber. * About the year 292 B. C., two bridges to the shores were constructed, whence the name "Inter duos Pontes" was given to the island. These bridges were probably constructed of wood; no historical reference is found, however, to the builder or the material employed. What finally became of these early structures is unknown; probably they were swept away by one of the inundations so common in the early history of Rome.

The bridge on the side of the Campus Martius was built by L. Fabricius in B. C. 62, as the inscription, still extant, shows. In consequence we find Dion Cassius giving it the name Pons Fabricius, † and a coin with the title L. Fabricius gives on the opposite side a view of a bridge with a representation of a snake plainly alluding to the Island of the Tiber. ‡

The span of the principal arches is eighty-two feet and the breadth forty-nine feet. The cornice which surmounts the bridge is ornamented with mitules. The inscription only partly legible, is as follows: L. Fabricius. C. T. Viar. Faciundum curavit. eidemq. probavit. Q. Lepidus. M. F. M. Lollius. M. F. Cos. Ex. S. C. Probaverunt. The latter part indicating that it was examined and found in good repair by Q. Lepidus and M. Lollius, consuls in 21 B. C. From this, the inference has been drawn by several that the senate always allowed forty years to elapse between the completion of a public work and the grant to it of their approval. This bridge, according to Horace, was a favorite spot with those who wished to commit suicide by drowning, and here Damasippus would have leaped into the Tiber were it not for the precepts of the stoic Stertinus. ||

* Livy II, 5.

† XXXVIII, 45.

‡ About the year 26, B. C,, a temple to Æsculapius was built upon the Island in consequence of a holy snake, brought from Epidaurus, having escaped and sought refuge on its shores.

|| Horace. Sat. II, 3.

In the middle ages the name of the bridge was changed to Pons Tarpeius, and later, owing to its proximity to the neighboring Ghetto, to Pons Judaeorum. It is now called the Ponte Quattro Capi, from the four quadri-frontal Hermes of Janus, which formerly adorned its parapet, and are supposed to have come from the temple of "Janus Geminus," which was situated in this neighborhood.

The Ponte St. Bartolomeo which connects the island with Trastevere was finished in A. D. 370 as is indicated by two existing inscriptions. It was dedicated to the use of the Roman people in the name of the Emperor Gratianus by Valentinianus, Valens and Gratianus. It is thought that these inscriptions refer to the rebuilding of the bridge. That there was an older bridge is clear not only from the fact that the island was called "Inter duos Pontes" before the time of Gratian, but also from the name Pons Cestius which occurs in the Notitia and undoubtedly belongs to this bridge.* It is not entirely clear who Cestius was, but it is generally supposed that a "Præfectus Urbi" by that name in B. C. 46 is the person after whom the bridge is named, and this agrees with the statement of Dion Cassius in reference to the building of the Pons Fabricius.† Coins bearing the name L. Cestius have been found, and A. Fulvio mentions an inscription dug up near the Ponte St. Angelo in which Val. Cestius. Curator. Reparum. et. alvei. Tiberis. is named in the fourth year of Vespasian. It seems probable that the Pons Fabricius and the Ponte St. Bartolomeo were built at or about the same time, as one structure would be of little use without the other.

There is an inscription in red letters on the inside of the parapet in which the name "Pontifex Maximus" is applied to each of the builders.

This bridge consists of one large arch of seventy-nine feet span and forty-nine feet in width, with two smaller arches. The name St. Bartolomeo is said to have been applied to the structure in consequence of the body of St. Bartolomeo having been carried over it in the year 983. This bridge has also been called the Pons Ferratus.

The Ponte Sisto known in ancient times by the Legionaries as the Pons Janiculensis was constructed — so says Procopius — after the building of the wall around "the little hill of the Janiculum." He further states, that after the building of the bridge several houses were erected on the Janiculum, so that from thenceforth the Tiber may be said to pass through Rome. Some ascribe the erection of the bridge to Trajan others, to Antoninus Pius, but ancient history gives no definite clue to the builder.

An inscription is given by Nardini which mentions its repair by Hadrian. Andrea Fulvio tells us that in his time it was called Ponte Aurelio. Its present name was derived from

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*Curios. Urb. Pontes. †Dion Cas. XXXVII, 45.

Sextus IV, who employed the architect Baccio Pintelli to restore it in 1474.

The bridge is composed of four arches, in an excellent state of preservation, the spans varying from fifty to seventy feet.

The Pons Triumphalis is, unfortunately, destroyed. A great diversity of opinion exists as to whether this bridge is the ancient Pons Vaticanus, or a separate and distinct structure. Bunsen and the older Italian topographers favor the latter, and claim that the Pons Triumphalis was situated above the Pons Ælius, and that it crossed the river in the direction of Monte Mario. Some ruins, apparently belonging to the piers of a bridge, have been found behind the Teatro Tordinone or Apollo, and are claimed to be identified with the Pons Triumphalis, by which the Via Triumphalis crossed the Tiber.* It appears not improbable that before the Pons Ælius was built this ancient roadway crossed at the Pons Vaticanus which was undoubtedly sometimes called the Pons Triumphalis Just above the Pons Ælius may be seen, at low water, the ripple, said to be caused by the ruins of the Pons Triumphalis.

Likewise the position of the Pons Vaticanus is undecided by any satisfactory evidence, but from legendary and historical resources the claim is advanced that it was situated about 300 yards below the Pons Ælius. Remains of a bridge are said to be visible at such a point, but since considerable masses of the piers in question were removed in 1813, very few persons have been gratified with a view of these interesting relics.

The Pons Vaticanus is generally supposed to have been built by Nero or Caligula as an approach to the imperial gardens. It is mentioned by Aurelius Victor and Prudentius under the name Vaticanus, but what finally became of the structure seems to have been left to mere conjecture. It was probably destroyed toward the end of the fourth century, as Prudentius says, that in his time, A. D., 404, the only approach to the Vatican was by the Pons Ælius. The attack of the Goths upon this part of the city as described by Procopius would lead us to presume that the bridge was broken up before his time. This fact has been quoted as the reason for the absence of any mention of this bridge in the Notitia.

The Pons Nerotanus mentioned in the "Mirabilia Romæ" † is probably identical with the Pons Vaticanus.

The Pons Ælius, commonly known as the Ponte S. Angelo, was built by the emperor Ælius Hadrianus, and was intended as a private means of access to the mausoleum which he built at or about the same time. The Einsiedlen MSS. gives an inscription, which in its time was found upon the bridge, assigning the date of its erection to the nineteenth tribuneship, and third con-

* Bunsen Beschreibung, Band II.

† Ed. Parthey, p. 4.

sulship of Hadrian,* and in support of this Nardini gives a medal, which dates from the third consulship of Hadrian and has upon one side the view of a bridge.† This evidence indicates the period of its erection as about 135 B. C.

The name Ælius is given to the bridge by Dion Cassius in his account of Hadrian's funeral. It received its present name of S. Angelo from the statue of an angel, which in later times was placed upon the mausoleum.

The structure originally consisted of three large arches between two smaller ones, which have now dissappeared. It is also said to have had a roof of bronze, supported by forty columns, of which it was despoiled during an incursion of the barbarians. Upon the parapets statues are said to have been placed, supported by buttresses erected on the starlings. The ancient arches, starlings and buttresses are in an excellent state of preservation and form an admirable example of the enduring quality of old Roman masonry, after withstanding for seventeen centuries the persistent force of rapid currents and the great pressure of violent inundations.

During the Jubilee of 1450 the bridge gave way in consequence of the great crowd,‡ and one hundred and seventy-two persons are said to have perished in the Tiber. It was then widened and improved by Nicholas V. Clement VII, in 1530, improved the approach from the city by extending the parapets on the left bank of the river, and ornamented the extremities with statues of Peter and Paul. The figure bearing the keys was sculptured by Lorenzetto, while the other, holding the sword, is the work of Paulo Romano. The balustrade, with the ten angels surmounting it, were added by Clement IX, in 1668. This arrangement has been likened by some to an avenue of the heavenly host, headed by the two apostles, who appear to welcome to the shrine of St. Peter the pilgrim from the distant country. Each of the angels carries the representation of some one of the instruments of the Savior's suffering. These angels, called the "breezy maniacs" of Bernini, are only from his designs.

This bridge, subsequent to the fall of the Roman Empire and during the dark ages, was known as the Ponte d' Adriano, and also in consequence of its leading to the basilica, Ponte di S. Pietro. A painting in the Trimita de Monti containing a portrait of Leo X in the character of Gregory, shows also a view of this bridge as it appeared in Leo's time.

Upon this bridge they who are inclined to indulge in reminiscences of antiquity may well pause with a solemn interest, for

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* Anon. Einsied, ap. Mabillon.

† Nardini ap. Graev. Thes. IV, p. 1445.

‡ Raynald ad. an. 1450.

by this structure the remains of Hadrian, Antoninus Pius, Marcus Aurelius, Commodus, Septimus Severus, Geta and Caracella were conveyed across the Tiber to their resting place in the mausoleum of Hadrian.

The bridge is fifty-one feet wide, and is composed of semi-circular arches, with spans varying from twenty-six to sixty-two feet.

About one and a half miles from the gate of Villa Borghese the Tiber is crossed by the Ponte Molle—the ancient Pons Milvius or Mulvius, which was erected B. C. 109, by the Censor M. Æmilius Scaurus.*

Livy mentions a Pons Mulvius at this place in 546. †

The present structure is deemed by some not to be older than the time of Nicholas V, who they claim rebuilt the Ponte Molle in fifteenth century, and in support of this some traces of what is supposed to be an older bridge may be seen at low water. There must have been a bridge here in very ancient times if there is any truth in the tradition of its being customary to throw a human being into the river as a sacrifice to Pluto. This offering was prohibited upon the return of Hercules from Spain. Lactantius names the Pons Milvius as the scene of this barbarity. ‡ Ovid, on the other hand, apparently alludes to the same story, but speaks of a wooden bridge, § and for this reason some antiquarians claim that the Pons Sublicius and not the Pons Milvius was the scene of this custom.

Here on the night of December 3, B. C. 63, Cicero captured the emissaries of the Allobrogi, with treasonable dispatches in connection with the conspiracy of Catiline. By this bridge on October 27, A. D. 312, Maxentius sought to escape to the city after his defeat by Constantine at the Saxa Rubra. In the haste and melee ensuing the crowd forced him into the river where his body, weighted down by his massive armour, was found several days afterwards. On this occasion the seven branched candlestick of Jerusalem was dropped into the river and probably there still remains. By this bridge the last triumphal procession of the Romans crossed the Tiber—that of the Emperor Honorius and Stilicho in A. D. 403. Here in A. D. 538 the bridge guards deserted their post and allowed the Goths to cross the Tiber. ‖ Here in the dissolute times of the empire, Roman youth resorted for the purpose of revelry and debauch, and here in the pursuit of illicit pleasures the monster Nero once narrowly escaped assassination. ¶ Nicholas V built movable platforms or draw-

* Aur Vict. de Vir. Illustr. c. 27.

† Lib. XXVII, c. 51.

‡ Instit. lib. I, c. 21.

§ Fast. lib. V, 621.

‖ Procopius. De Bello Goth. Lib. 1, Cap. 14.

¶ Tacitus, Lib. XIII, Cap. 47.

bridges at either extremity. These in 1805 were removed by Pious VII, who constructed the existing parapets and the whole of the upper part of the bridge as it appears at present. The statues of Christ and John the Baptist at the entrance to the bridge are by Mochi. The tower was built by Brelisarius.

The bridge is twenty-nine feet in width, and consists of a series of arches with spans varying from fifty to eighty feet in length.

The catalogue of the Curiosum gives the Pons Probi as last in the order of the bridges,‡ while the "Mirabilae Romæ" assigns a like place to the Pons Valentinianus. This latter is without doubt identical with the Pons Probi, the name Valentinianus simply indicating that it was repaired by Valentinian.

The site of Pons Probi is very difficult of determination. The most likely surmise is that which supposes the remains visible at the foot of the Aventine to be those of the piers of this bridge; but the silence of ancient history upon this point renders a definite and satisfactory conclusion impossible.

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THE ANCIENT MEXICAN AND CENTRAL AMERICAN CODICES AND INSCRIPTIONS.

As the history, so far as known, and also the general description of the few aboriginal manuscripts hitherto discovered have been repeatedly published, I shall take for granted that the reader is familiar with these, and will allude to them only so far as is necessary to make clear my statements.

THE CODEX TROANO.

This aboriginal document usually mentioned as "*The Manuscript Troano*," is in reality a *Codex* and should be designated as such. Like the Dresden Codex, the Codex Peresianus and Codex Cortesianus (the fac-similes of the four are now before me), this is beyond question a genuine ante-Columbian Maya document, or at least wholly aboriginal and untinctured by the influence of European civilization. Like them it consists partly of written (hieroglyphic) characters, and partly of figures of men, women, animals, etc.; often more or less grotesque;

‡ Curios Urb. Pontes, VIII.

often colored, but often only outlined in black. In all, the pages are usually divided into from two to four compartments by broad lines running across them from side to side. The left margin and a strip along the upper part of these compartments is generally occupied by the written characters, the rest of the space being covered with figures, as shown in the annexed figure, which is copied from plate XIX. (Codex Troano.)

Frequently, as shown in this figure, columns of characters extend down behind and between the figures. The column or columns at the left of the compartment, as in this case, consist of day symbols over which there is in nearly every instance a numeral character.

The chief or general signification of many of the figures in these compartments can be satisfactorily determined. For example, some relate to the traveling merchants, others to the methods of capturing wild game; some to the festivals of the New Year, others to the rains and storms to which the region was subject and to the agricultural pursuits of the people; some to the custom of painting once a year their implements and utensils, others to the manufacture of cords and cloth, and some to the manufacture of their idols. We are thus enabled to make at least one step in the interpretation of this mysterious document.

Examining the day columns, usually placed at the left of these compartments, we find that we can readily determine the days indicated by reference to the key which Landa has left on record in his "*Relaconi de las Cosas de Yucatan.*" For example, the column at the left of the upper compartment in our figure consists of five symbols, which, commencing at the top (the little rings or dots and short lines at the top are numeral characters and are not included), and reading downwards, represent the days *Cib, Lamat, Ahare, Eb, Kan.* Plate XIX (Codex Troano.)

Examining the list of Maya days and the order in which they stand with relation to each other, we are convinced that the order in which the days of these columns are to be taken is from the top downwards. The hundreds of examples in this and the other Maya Codices in which this holds good — without a single exception — is conclusive on this point.

We have in this at least an indication of the order in which the other written characters or hieroglyphics are to be read. In a number of plates there are series of columns or lines which we may represent by letters. Each letter is used to represent a particular character, hence where a letter is repeated the character it indicates is repeated. It is hardly possible that this should be read in lines, as entire lines consists of a single character repeated. If we suppose the groups to be ritualistic

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l	m	n	o	p
b	b	b	b	b
c	c	c	c	c
d	d	d	d	d
f	g	h	k	q

to be read in columns, the change in the first and last characters will be consistent with this idea.

Still the Maya scribes adapted their work to circumstances, and where columns were not practicable, changed them to lines. In our figure we notice in each compartment (the day column at the left and the numeral characters are not now considered) over each squatting figure four compound characters, and behind each a column of four compound characters. If we use letters in place of these characters, repeating where the character is repeated, the arrangement in the lower compartment of our figure may be represented thus: It is apparent from this that the first and third columns have been changed into two short lines to allow space for the human figures. From numerous examples of this kind and other evidence, we ascertain that the usual method was to place the written characters in columns, to be read from the top downwards, the columns succeeding each other from left to right; that when they are placed in lines they are to be read from left to right, the lines succeeding each other from the top downwards. But throughout this Codex (Troano) the lines do not appear to be continuous across the page in any instance; on the contrary, the groups are always in short, double columns, as shown in the last illustration. The same rule applies in the Codex Cortesianus, and apparently in the Codex Peresianus. Most of the inscriptions, as for example those on the right and left slabs of the Palenque Tablet, a figure of which is given in the AMERICAN ANTIQURIAN for January, 1884, are to be read in double columns precisely as the shortened columns over the squatting individuals in our figure.

l	a	l	l	a	l
n	d	a	w	n	a
		s			r
		t			k

In the Codex Troano the numeral characters — the short straight lines and large dots — belong to two classes, indicated in the original by the two colors, black and red. In our figure the black are represented by the solid black lines and large black dots (I do not refer to the lines and circles of minute dots connected with the written characters), and the red by hol-

low lines and little circles. The red numerals (except on the "title-page," which is yet an impenetrable mystery) are used only to number the days of the Maya week and the years of the "Indication," and hence never denote a number greater than 13. The black are doubtless sometimes used to indicate the numbers of the months as claimed in my "*Study of the Manuscript Troano*," but since the publication of that work I have discovered by indisputable evidence, which cannot be given here, that these are in a large majority of cases used only as *counters*. For illustration, counting 5 days from Thursday 7th brings us to Tuesday 12th; the 5 in this illustration is a *counter* in the sense most of the black numerals appear to be used. The correctness of this conclusion is easily verified by applying it to the hundreds of series found in the Dresden and Troano Codices. From this fact I have been enabled to determine beyond question that the character seen in the extreme lower right-hand corner of the upper compartment of our figure and which I was led formerly to believe was a death symbol, is in fact, a symbol for the number 20, and if phonetic for the Maya word *Kal* or *Hunkal*.

But little progress has so far been made in deciphering the written characters. That some of them are phonetic has been satisfactorily established. On the other hand, it is evident that some are symbols and others abbreviated pictographs. Landa's alphabet furnishes no aid in this attempt, yet the further we progress toward the solution of the riddle the more are we disposed to believe there is a substratum of truth in the old Bishop's explanation. The day and month symbols furnish but little aid; on the contrary, the fact becomes more and more apparent as we progress in the study of this document that the names now applied to these symbols are, in most cases, not only not phonetic equivalents, but are different from the names formerly given to them. We are therefore limited in our attempts at decipherment to the slow and laborious process of long and close study of the characters and innumerable comparisons, so that by discovering the different uses made of a character we may at length ascertain its signification, and, if phonetic and Maya, its equivalent in words.

This, it is true, is very slow work, but it is the only method of solution that offers any hope of success. The comparison of these characters with the hieroglyphics and characters of the nations of the old world has failed in the hands of some of Europe's best philologists to lead to any satisfactory results. So far as these characters are phonetic they will ultimately be deciphered. Although but little progress has been made, yet it is sufficient, as I believe, to justify this conclusion.

The symbols of the four cardinal points have been determined, although there is a difference of opinion as to their assign-

ment. If phonetic, as they appear to be, this uncertainty is limited to but two words for each. As heretofore stated, the symbol of twenty has now been determined beyond question. I have also detetermined by evidence satisfactory to myself and and which I think will ultimately be accepted, the hieroglyphics for "earth," "wood," "bread," "stone-heaps," "owl" (*strix passerina*), and some eight or ten other terms, all of which appear to be phonetic and in which similar elements appear to represent similar sounds. Some of these have been accepted by Rosny, but the majority have been determined since the publication of my "*Study of the Manuscript Troana.*" I do not include in this enumeration the tentative illustrations of that work, for although I believe most of them will stand the test of future investigation, I have as yet found satisfactory means of testing but few of them.

That many of the characters are symbols and not phonetic, is very evident. Several of these I have by careful study and comparison succeeded in determining. But it is impossible to explain the steps by which my conclusions have been reached without fac-similes of numerous plates of the Codex which cannot be introduced here.

WASHINGTON, D. C. CYRUS THOMAS.

LECTURES ON POLYTHEISM.

II. ON THE EGYPTIAN MYTHOLOGIES.

In bringing before you the subject of religion among the Egyptians, the first point which strikes me as peculiarly characteristic of this belief is the singular completeness with which the earlier forms of cultus were preserved among them side by side with the highest development to which religious thought attained in that country. Ancestor worship in all its forms survived. There were family sacrifices to the deified progenitors; there were official sacrifices with sepulchral chapels and temples consecrated to the tribal ancestry of special localities; there were national sacrifices to the deified kings, the forefathers of the present king, who even while he sacrificed to them, was looked on as a God. The higher gods of after introduction were, as we shall see, united with them by genealogies, and took the superior rank, but ancestor worship was not extinguished, it was merely modified by this proceeding. Again, the animal worship which succeeds in the normal order to ancestor worship,

remained established among the people, even if the first dynasty of rulers refused to recognize it. It certainly was not a newly imposed worship in the time of Kakan, as some would have us think. "Such usages," says Tiele in his excellent "Outlines," "cannot be imposed; they grow up among the people." In the identification of the bull Apis and the god Asar (Osiris), and the like, we find the connecting links between the ancestor worship and that of animals. But it is not until we come to the worship of Osiris himself that we are properly in the realm of Polytheism. The worship of Osiris is the oldest and most universal of all their numerous pantheon. Although it was especially vigorous in Thinis-Abydos, it had a recognition in every part of Egypt, greater than that of any other god. The story of his death at the hand of his brother Set, of the lamentations of his wife and his other sister, Isis and Nephthys, of his endowment with the power of the word by Thot or Thoth the moon god, the god of the arts, of his avenging by Har-Pa-Chart, Horus the child, and of his reigning among the dead — all this is a story more familiar to us than any other Egyptian myth, and rightly so, for it was undoubtedly the most central of all Egyptian beliefs. This tale of the dead sun killed by the darkness and rising again in the morning, enacted every day before their eyes, never lost its freshness for them, for they saw in it the victory of light over darkness, of knowledge over ignorance, of virtue over sin, but especially the conquest of life over death. The same belief that animates the christian hymns at Easter, and the scientific philosopher in our own time — the perpetual resurrection of all that seems dead — the denial of the extinction of matter, and of mind — the recognition of the fact that

> Never star
> Was lost here, but it rose afar,

was the continual solace of these Egyptians. If it were my intention now to trace the social and political results of such a faith, I should enlarge on the identification of the worshiper with Osiris and his ultimate unison with him, but my present task is a lower one and I must ask you to consider the form in which this belief was set rather than the belief itself.

To begin, I must call your attention to the peculiarly Egyptian fourfold form of personified sun god. We have first, Har-Pa-Chrat, the child Horus, the son of Osiris, who avenges him by killing the darkness: the rising or eastern sun. Secondly, we have the night sun, Set, who kills Osiris and who oscillates in meaning between the darkness itself in which the setting sun dies and is buried, and the invisible sun who travels back from west to east in the night time: the northern or dark sun. Thirdly, we have Osiris himself, the dying or setting or western sun. Fourthly, Har-ur, the father of Osiris, the sun in his strength

at the noonday: the southern or exalted sun. This fourfold division pervades the whole of Egyptian mythology.

TABLE OF THE FOURFOLD CHARACTER OF THE EGYTIAN SUN.

Sun Stations.	*King-Gods.*		*Later Gods.*	*From the Book of the Dead.*	*From the Stele of Thotmes IV.*	*From Esneh.*	
Rising.	1. Ptah.	7. Horus	Min=Khem.		Kheper.	Shu.	Ptah.
Noon.	2. Ra.	[Har-ur]	Amun.	Ra.	Ra.	Ra.	Tanen.
Setting.	3. Har-hat	5. Osiris.	Mont.	Bennu.	Harmachis	Osiris.	Osiris.
Night.	4. Seb.	6. Set.	Chnum.	Tum.	Tum.	Set.	Sochar.

Again, I would direct the attention of any one who wishes to understand Egyptian myths, to the manner in which the triads or threefold groups of gods are composed. The ordinary explanation of them, as consisting of father, mother and son, is by no means sufficient, and only explains a part of them. It seems to me that the real group is a tetrad, although only a derived triad is usually sculptured or painted, and that four different triads are thus provided for the artist, by the omission of one member of the tetrad. Thus in the case of the Osiris group, the full tetrad consists of Osiris, Horus, his son, Isis, his wife, and Nephthys his sister — these two latter representing the western and eastern horizons, the evening and the morning red, and even occasionally upper and lower Egypt (in cases where the kings and gods are identified). The tetrad is arranged thus: 1. Nephthys; 2. Osiris; 3. Isis; 4. Horus. If Nephthys be omitted, we have the ordinary triad, Osiris, Isis and Horus; if Osiris be omitted, we have Nephthys, Isis and Horus; if Isis be omitted, we have Osiris, Nephthys and Horus; if Horus be omitted, we have Nephthys, Osiris and Isis; and all these forms of triads are found in the sculptures and paintings.

Alongside with this Osiris system, existed all through historic time but not in so universal a distribution over the country, the rival doctrine of Ra worship. The conflict between Ra, the sun god of Heliopolis, and the serpent Apap, represents the struggle of the sun and the storm cloud. The group Pta, Ra, Har-Hat and Seb, represent the sun as rising, noonday, setting

and midnight, just as the Osiris group do. These are in like manner connected in genealogical form. Thus Ra is son of Pta, and Seb, of Ra. Har-Hat is probably a brother of Seb, as Set is of Osiris. Consequently when the Ra worship came to be amalgamated with that of Osiris, we find this group prefixed to the Osiris group in the list of kings, thus: 1. Pta; 2. Ra; 3. Agathodæmon (Har-Hat); 4. Seb; 5. Osiris; 6. Set; 7. Horus. These seven are the seven divine rulers. It will be noticed that the junction of the two groups is made by identifying Seb with the father of Osiris, whereas the true father of Osiris in a still earlier form of myth was Har-ur, the noonday sun. This difficulty arose from the fact that in the Osiris legend the rising sun is looked on as the youngest of the family, while in the Ra myth, Pta, the former, sculptor is regarded as the oldest of the gods. Another form of this genealogy is Tum, the hidden or night sun, who begets Shu, the outspreading or rising sun, who in turn is father of Ra. Kheper, again, the continually self-renewed, is a form of the rising sun, while Harmachuti-Ra, Ra on the horizon, and Bennu the dying Fhœnix, are forms of the setting sun. In like manner Tanen is a form of the noonday sun, and Sochar, the night sun.

In the writings of the Egyptologists, the offices of several of these are differently assigned. I venture, notwithstanding, to state my own opinion, with some confidence, for these reasons: First, There is no item of it that is not supported by some one of the illustrious writers who are far better acquainted with Egyptian lore than I am. Secondly, It gives a satisfactory arrangement of all the compound deities as far as I am acquainted with them. Thirdly, I have not been able to find any self consistent arrangement in the writings of Wilkinson, Sharpe, Kenrick, Birch, Renouf, etc. Only on this plan can I explain such compounds as Shu-Ra-Osiris-Tum at Ezneh (Champollion); Kheper-Ra-Harmachis-Tum, on a Stele of Thothmes IV (Tiele); Khem-Ra-Bennu-Tum, in the Rock of the Dead; Pta-Tanen-Osiris-Sochar (Tiele); surely each member of every group must represent the sun in a different character from the other members.

Later still than the deities we have considered, are Min (also called Kem or Amri), Amun and Mont. These again are variants of the Sun god. Khem, in fact, is frequently undistinguishable from Pta, and Amun is identical with Ra, as Amun Ra. Nevertheless, there was a tendency in later times to identify them with the elements; Khem with earth, Amun with air, Mont, the war god, with fire, and an older deity, Chnum or Kneph, with water. This and similar refinements misled modern inquirers for some time. Another cause of misunderstanding was the tendency of the Greeks to identify the Egyptian deities with their own. Modern students approached Egyptian mythology through the

portal of Herodatus, and identified Amun with Zeus, Pta with Hephæstus, Ra with Apollo, and Khem with Pan. There can be indeed little doubt that there was in the earliest worships before they became amalgamated in one pantheon, such an analogy to be traced. Seb, the earth, was analogous to Demeter, his consort being Nutpe, the heaven, who corresponded to Zeus; Zeus and Demeter being the same as Dyaus and Prithin, the Hindoo parents of the gods; Chnum, again corresponds to Poseidon; Ra to Apollo; Thoth to Hermes; Pta to Hephæstus; and probably Mont to Ares, but all such comparisons can only apply to an earlier form of Egyptian belief than we have record of. In historical times all these had become identified with the sun and fire worship, and storm worship had disappeared. The Egyptian mythology corresponds, not in world chronology but in stage of development, less to the Vedic or Greek mythology than to the Puranic, where all the Adityas were identified with the sun, as we shall see in my next lecture.

There is, indeed, hardly a doubt in the minds of the greatest Egyptologists that the whole of the greater Egyptian gods became ultimately varying aspects of one deity, the Sun. Even Chnum, the god of waters, shows in his name, which means the architect, an analogy with the fire god, Pta, the sculptor. As time went on, the deities get separated from their abodes. Polydæmonism becomes Pantheism. This takes place in all religious developments, but in Egypt an earlier development is traceable; not only did Ra separate from the sun's disk, and become an anthropomorphic god, but the sun itself had previously been confused with the fire-glow of its rising, the air through which it ran its daily course, the water on which it traveled back from west to east, and the earth under which it dwelt in its tomb. Hence, in their earlier developments, we may judge that Ptah had been a creating fire god; Amun, a supreme air god; Chnum, a creating water god; Seb, an earth god, the father of the Osiris race, and so on. In no mythology is it so necessary to remember that we are dealing, not with the beliefs of a nation at some fixed epoch, but with a historic development of some thousands of years, in addition to a prehistoric development of unknown period. Many a statement that is true, if proper regard be had to the date to which it may be applied, becomes utterly false if handled in the careless way of some investigators, Lenormant for example. It is also needful in the case of Egypt, as in that of Greece, to pay much attention to the local worship of each deity. The Osiris worship was very widely spread; but of the other deities even the greatest were circumscribed in a narrow bound of territory. The chief worship of Pta was at Memphis, of Amun at Thebes, of Ra at Heliopolis, and so on.

I must now say somewhat of the goddesses. They are far from being like the Vedic, mere reflexes of the male divinities.

We can see this in the active part played by Isis in the Osiris myth. Yet they are by no means clearly individualized. Take, for instance, Bast, the consort of Pta and Sekhet, his greatly beloved, whose lion or catheaded statues are so abundant in the British museum. It is clear that these deitus have similar relations to Pta that Isis and Nephthys have to Osiris. It is not so clear what they mean. Tiele, who is usually accurate and rational, says: "Pta personifies the soul of the universe, just as his 'greatly beloved' Sekhet represents its destroying and purifying power, and Neith, at Sais, often united with him its mysterious operation, while his form Bas with his consort Bas, symbolize its beneficent warmth and cheering glow." I don't believe a word of it. These early worshipers had scarcely passed the boundary line between Polydæmonism and Polytheism. They had not the powers of abstraction and classification of a modern Dutch professor. They had confused Ptah himself as a fire god, with the sun. They were more concrete in their worship than any other mythologies that have come down to us of equal complexity. We are to suppose that they distinguished into different divinities, first, a cosmic soul fire; second, a purifying and destroying fire; third, a mysteriously operating fire; fourth, a beneficently warming fire; fifth, a cheeringly glowing fire! Impossible. I have found only two aspects of fire in any mythology that I have examined; one, that of the heavenly, sacrificial, beneficent fire, identical with the altar flame and the dawn of morning, and the other a volcanic, destructive fire, identical with the lightning. Beyond these it is most unlikely that any Polytheists could or would discriminate. These two aspects are given us in Ptah and Sekhet.

Another great goddess is Hathor, "The Horse of Horus," the oldest of all the goddesses, who with Horhut was adored in times when even the Osiris worship had not developed. Hathor is certainly the same as the Semitic Istar, the Sabæan Athor, the Ashtoreth of the Bible, the Surya of the Veda, here the sun glow; not the Aphrodite of the Greeks, who as the lover of Adonis was afterwards confused with her; Hut is the morning sun glow, Hathor being that in the evening; Nut, the consort of Seb, is the heaven, Seb being the earth. In most mythologies, conversely, the heaven is the male, the earth the female. As for instance, Dyaus and Prithiri. Neith, the virgin mother, is another of the oldest goddesses, identified by the Greeks with Athene. Sati, who has personally been identified with Here, and whose emblem is an arrow shot through the skin of a beast, and whose name signifies "arrow," I take to be a form of the same power as the Greek Artemis. Tefaut, "Humidity or Foam," the wife of Shu, is surely the same as Aphrodite, who also is foam born and the consort of the fire god Hephæstus.

It would be profitless in this brief sketch to say anything of

Mut, Thriphis, Rata, Anouka, and the rest of the goddesses. The most remarkable point about them is their great family likeness, their capability of assuming each other's functions, and their consequent want of individuality. I had better, perhaps, turn to the singular position of the moon in this mythology. Thoth, the principal moon-god, belongs to the Osiris group; but the great moon function of measuring time led to the ascription of all measurement of space as in land measuring, of energy as in weights, of all magnitude in numbers, to the same deity. Hence he was the God of all science, and also of all literature; art and science being regarded as cognate and not as by our modern critics of disparate nature. There was another moon-god, Chons, the son of Amun and Mut; he is of later growth and never attains the importance of Thubi (Thoth). A great deal more than its real value has been assigned by the advocates of Henotheism to the doctrine creation by a supreme deity aided by the eight cosmic powers. These powers are the celestial ocean, the air, the dark or the undifferentiated, and time; each of these being presented as male and female. The supreme God is sometimes Ptah, as the heavenly fire, sometimes Chnum, as the formative water, sometimes Hapi, the Nile God. But all this is very far from Henotheism; it it is simply the mythologic expression of differences of view similar to those of the Platonists and Neptunists of modern geological theory; we shall, perhaps, some day be told to adopt a Heno-scientific view with regard to them.

If we look at the religion of Egypt as a whole we can mark out certain stages in its history. During the early period, say from 5,000 to 3,000 B. C., especially under the first six dynasties, the sun worship of Ptah, Ra, Har-Hat, Osiris, was supreme. Ptah was specially adored as the uniter of the two divisions of the kingdom previously under different rulers. It was during this early period that not only was animal worship continued as a state institution, but also ancestor worship in the third or national stage was kept up at its greatest height in the form of King worship. The tombs in these pyramid-building times are rarely adorned with representations of the Polytheistic gods; scarcely ever is any allusion made to them in the inscriptions. The earlier worships were still strong and the priesthood weak. At a later date, from 3,000 to 2,000 B. C., when the sovereign town was no longer Memphis but Thebes, when agriculture and the pursuits of peace were flourishing, when the religion naturally assumed more and more the local forms that had developed at Thebes, then we find the supremacy of the Memphis sun god greatly modified and obscured. Ptah, however, is still especially worshiped, and sometimes even as the creative fire alongside of Chnum the formative water. Amun has been identified with Ra as Amun-Ra, and not only in that form in which he was ulti

mately to become the supreme god, but also in the form of Mont, the water god, and of Min or Khem, the god of agriculture; he assumed the highest rank. Then, too, when canals were developed, when the whole irrigation system was completed, was the time when not only Chnum but Sebak, the Nile god, came into special prominence. This crocodile god, this god of the inundation, the limits of which were supposed to be foreshown by the deposition of the crocodile's eggs, is a striking instance of the still prevalent importance of animal worship.

With temporary interruptions of development, such as the attempt of Amenophis IV, to substitute the worship of Ater-Ra the sun disk, for that of Amun-Ra, we have no concern in this sketch. We can only note the period of decay in the last thousand years B. C., the incursions of foreigners, Persians, Assyrians, and Greeks, produced an assimilation in the Egyptian deities to their own; Osiris and Set became more like Ahormazdu and Ahriman; Osiris-Apis grew similar to Serapis; Hathor was assimilated to Aphrodite. Above all, the goddesses became elevated above the gods; this broke up the whole system. It would be very interesting to trace many of these changes in detail — to trace for instance the serpent, the creeping thing, through all his changes, from the Aryan serpent to the Hebrew Seraph, then to Serapis of Sinope, and finally to his confusion with the Asar-Apis, the bull Osiris. But I must not be tempted from my immediate object which is not to give you an account of the mythology of any one country, nor to bring before you a selection of amusing or interesting details from the mythologies of all countries, but to impress on you, as far as my time limits will allow, the true order of the development of Polytheism and consequently the fallacy of the recent theories of Henotheism and the like. What is the exact historical position of Egyptian mythology in relation to other nations it is not at present possible to say; we cannot tell whether the sun worship came from an Aryan source; whether the Osiris and other myths and the cosmogony sprung from an Accadian or Semitic origin. But we can fix the position of Egypt on the universal scale with great accuracy. We see that the beginning of Egyptian history coincides with the introduction of Polytheistic sun worship, the epoch when earlier beliefs have not disappeared, when ancestor worship and animal worship still have not merely a real but a recognized existence, forming part of the state religion. Consequently the growth of Polytheism can be studied in many respects better in this than in any other system.

Conversely, the effects of the Egyptian system on other nations have been enormous, and can be traced. On the Hebrews, and still more on the Phœnicians, its effects can be seen in many ways. Especially is the influence of Egypt on the Greeks, whom it first reached through the Phœnicians, important; yet

even this is overshadowed by the results which are exhibited in Pagan Rome and afterwards reproduced in Christian Rome, to whom it furnished the doctrine of the immaculate conception and the worship of a virgin goddess, who gradually assumed the highest position in the Christian Pantheon.

LONDON, G. B. F. G. FLEAY.

TRANSLATION OF THE OBELISK IN NEW YORK.

THE MIGRATION OF OBELISKS.

The removal of an obelisk from Egypt to London, and more recently the re-erection of another at New York, has called attention to these singular monuments of antiquity, and especially to the migrations which some of them have undergone. It appears that obelisks were erected in Egypt as early as a date which preceded the exodus of the Israelites from their house of bondage.

Heliopolis was the chief seat where the obelisks were erected, and from this place the majority of the migrations have begun.

Great uncertainty has existed as to the date of these removals, but latterly the subject has received such critical and careful study that we are now able to say with considerable definiteness at what times they have occurred.

The first thing to be noticed is the fact that nearly all of the obelisks came from the same locality.

The places where some of these obelisks are at present, contrast strangely with the original locality, and the object for which they were removed also differs widely from that which led to their first erection.

The cities which now boast of the possession of an ancient obelisk are Rome, Constantinople, London and New York, but the period of the removal and erection in these cities covers nearly eighteen centuries.

OBELISKS REMOVED DURING THE REIGN OF AUGUSTUS.

Ancient writers dwell with frequent iteration upon the ruin visited upon the monuments of Egypt by Cambyses when he subjugated that country, and many of the obelisks shared the fate of the buildings before which they stood. Pliny tells us of a notable exception at Heliopolis, where the conqueror was so struck with the beauty of one of these shafts that he ordered the

flames which had already reached its pedestal to be extinguished, out of reverence for its symmetry and workmanship, though he had no reverence for the city itself. Here flashed out through his usual ferocity the true Persian love for the beautiful, such as prompted Xerxes to adorn the stately plane-tree in the valley of the Menouder with golden ornaments, and appoint a perpetual keeper in its honor. Under the Ptolemies we know of the removal of but one obelisk from its original site, and that was done by Ptolemy Philadelphus to embellish the temple which he erected at Alexandria for his wife and sister Arsinoe. In speaking of this obelisk, Pliny says that under the Romans it was found to be an inconvenience to the docks, and was accordingly removed to the Forum by a Prefect named Maximus, who is now supposed to have been Prefect during the latter part of the reign of Augustus. Pliny then adds that there are two other obelisks near the harbor of Alexandria, before the temple of Cæsar, and Augustus transported two also to Rome, one of which he placed in the Circus Maximus, and the other in the Campus Martius, where it served for some years as a sun dial, though it had already become useless for that purpose in his time, for what reason he did not know. Both of these obelisks were overthrown and lay for centuries on the ground covered by debris, till rediscovered and re-erected — that of the Circus Maximus in 1589 on the Piazza del Popolo, and that of the Campus Martius in 1792 on the Piazza Monte Citorio, where they still stand. The latter was found in several pieces and considerably mutilated. It is supposed to have been brought from Heliopolis and to have been originally erected by Psammitichus I or II. The other, which we give,* is in a fair state of preservation, and be longs to the earlier epoch of the XIXth Dynasty. It was erected at Heliopolis by Seti I, who sculptured the pyramidion of the three first sides, and the centre line of hieroglyphics of the same sides. His son, Ramses, II added the two lateral columns on each of these sides and all on the fourth. Each king has two different cartouches or ovals, which may be easily distinguished and recognized in the cut. Both these obelisks were removed to Rome in the year 10–9 B. C., as is ascertained from the inscriptions which were engraved upon them by Augustus, and were found when the shafts were re-exhumed at Rome. They were dedicated to the Sun by the Roman, as they had been originally by the Egyptian.

The pair at Alexandria, commonly called Cleopatra's Needles, were from Heliopolis, like the others, and were supposed by some to have been conveyed to Alexandria, by Cleopatra, and placed before the shrine she built to Julius Caesar. Others have thought that this was the work of Augustus, and others of Tiberius. In fact, nothing positive was known about it till 1877,

*See frontispiece.

when Mr. Dixon proceeded to Alexandria to remove to England that one of the pair which had lain prostrate for many centuries. Being unable to discover the pedestal of this, he cleared away the accumulation about the foot of the other, to learn what sort of a base should be made when he reached England with his prize, and in the process he ascertained that it had originally rested upon four bronze sea crabs, two of which still remained in position. On the right claw of one of these, a bilingual inscription in Greek and Latin was found, which was read to this effect: "In the eighth year of Augustus Caesar, Barbarus, Prefect, of Egypt erected (this), Pontius being the architect." This fixed the date of erection in B. C. 23-22, under Augustus, and when the obelisk, after some mishaps, was finally set up in London, this date was inscribed upon its pedestal, as it was upon the restored crabs placed under our own monolith after it had been transported with such brilliant success by Commander Gorringe from its position at Alexandria, to the knoll in Central Park. This date, however, has since been proved to have been historically impossible; by clearing away the rust on the crab, now in the Metropolitan Museum, a character was discovered in the Greek date and a corresponding one in the Latin, which set the event ten years later, which removed all historical difficulties, and brought it into harmony with an inscription from Philae, in which the same Prefect is mentioned with his full name, P. Rubricus Barbarus, in the same year, 13-12 B. C. This Prefect is totally unknown from ancient historians and other writers, and his very name is disclosed to us only by these two inscriptions, and two others in Italy, have been shown to belong rightfully to him. He was a member of a plebeian family, natives of Casinum, and obviously a favorite of the emperor's; and it is due to him and his architect Pontius, that the first obelisks were removed by the Romans. It required considerable boldness and engineering skill to do this, and the first trial was made from Heliopolis to Alexandria. This proved so successful that the greater feat of transporting a pair to Rome was conceived — a feat of which Pliny says, "the difficulty of conveying these monoliths to Rome by sea surpassed everything, and the vessels used were marvelous spectacles, so that Augustus consecrated the first one at Puteoli." This was done only three years after the others were erected at Alexandria, and as we find the name of "Pontius the Athenian" as the artist of a beautiful fountain in the gardens of Mecænas at Rome, it is reasonable to suppose that the architect who was so successful in the first attempt was also the person selected for the second and greater, so soon after. Hence we may think that the obelisk of the Piazza del Popolo, the cut of which we give, has this tie also which binds it to our own, besides the fact that both shot up into the Egyptian sky at Heliopolis for long centuries together, and both contain the inscriptions of Ram-

ses II on the outer columns of each face. Ours, however, was not erected by Seti I, but some three centuries earlier by the great conqueror, Thothmes III, who engraved the central columns in his own honor and that of the god of Heliopolis. Ramses in this case, as so frequently elsewhere, appropriated the vacant space to himself, and the same cartouches of his may be read here as upon that of the cut given.

As an example of the style of these lordly Egyptian monarchs, we subjoin the translation of the hieroglyphics of our obelisk, as rendered by Dr. Henry Brugsch, for the New York Herald, of Feb. 22, 1881.

The sculptures of the pyramidion are thus described:

TRANSLATION.

On the north face "King Thutmes III is represented as a Sphinx, with the head and arms of a man. He is offering two vases of wine to the Sun God On. His body rests on a sort of pylon, decorated with the titles:

'The Strong Bull || Who manifests himself || King || in the Thebaid, || The Son of the Sun: || Thutmes.

Over the body may be read:

The Gracious God, || Lord of the Two Worlds, || King of Upper and Lower Egypt, || Ra-men-kheper.'

On the west face Dr. Brugsch makes the text the same as above, with some portions undecipherable, and the south face illegible. The east face has the same representation and text as the north, the sun-god being called Hormakhu, the Harmais or Harmachis of the Greeks. "The king's titles are: 'The Gracious God, || The Lord of the Two Worlds: || Ra-men-kheper.' The offering to the god is indicated by the inscription: 'Gift of Wine.'"

North Side of Shaft.

TEXT OF CENTRE LINE.

[*Name of Royal Standard.*]*

Horus: Magnified and Enlighted by the || Crown of Upper Egypt.

[*The Official Standard.*]

The King of Upper and Lower Egypt: || Ra-men-kheper.

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*All Egyptian kings had five distinct appellations which were always preceded by five titles. These titles are:

1. The *Name of the Royal Standard*, preceded and indicated by the words, "Horus," or "Horus, the Sun."
2. The *Official Title*, preceded by the words, "The King of Upper and Lower Egypt," or "Lord of the Two Worlds."
3. The *Crown Title*, preceded by the words, "The Lord of the Diadems of the Vulture and of the Serpent *Ouraios*."
4. The *Family Name*, indicated by the expression, "The Son of the Sun."
5. The *Title of "The Victorious,"* preceded by the words, "The Golden Horus."

[*The Title of the Victorious.*]

The Golden Horus. || The Strong of Arm. || Who beat the Kings of Foreign Nations || Who were numbered by hundreds of thousands. || For his Father, the Sun-God Ra, ordained for him || Victories over all Lands. || Mighty Power || Was concentrated at the points of his hands || To widen the Boundaries of Egypt.

[*The Family Name.*]

The Son of the Sun || Thutmes || . . . Who gives Life of all Stability and Purity || To-day as ever after.

EAST SIDE. CENTRE LINE.

[*Name of the Royal Standard.*]

Horus: The Strong Bull || Who manifested himself as King in Thebaid.

[*The Crown Title.*]

The Lord of the Diadems of the Vulture and of the Serpent. || His Kingdom is as lasting as is the || Sun in the Heavens. ||

[*The Family Name, enclosed in an elliptical circle and containing a curious allusion to the meaning of the name Thutmes.*]

The Creature of the God Tum, Lord of the City of On, || The Son who came out from his Belly, and whom || The God Thut formed. [Mes.*]

They created him in the Grand Hall [*of the Temple of On*t] || After the model of their own body, || Being conscious of the Great Deeds he was to accomplish: || He, whose Kingdom should be of long duration.

[*The Official Title.*]

The King of Upper and Lower Egypt, ||Ra-men-kheper, || Friend of the Great God Tum, and of || The Circle of his Divinities. || He who gives || Life of all Stability and Purity || To-day as ever after.

SOUTH SIDE. CENTRE LINE.

[*Name of the Royal Standard.*]

Horus: the Strong Bull, || Friend of the Sun-God Ra.

[*The Official Title.*]

The King of Upper and Lower Egypt, || Ra-men-kheper. . .

. . . . . .

WEST SIDE. CENTRE LINE.

[*Name of the Royal Standard.*]

Horus: the Strong Bull, || Who manifested himself as King in the Thebaid.

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* "*Thoth created him Thothmes.*" This cartouche is very curious and interesting, as the phrase is calculated to form the name of Thothmes with the last word of each column.—Chabas, Records of the Past, Vol. X. p. 24.

[*Official Title.*]

The King of Upper and Lower Egypt: || Ra-men-kheper, || Who caused || Great Rejoicing || In the House of the Sun God Ra — [*that is Heliopolis*] Who created || The Beauty of the Sun Disk; || The Day when for the first time was made . . . . . .

. . . . . .

NORTH SIDE. LEFT-HAND LINE.

Horus: the Strong Bull. || Friend of Justice, || King of Upper and Lower Egypt. || Lord of the Periods of Thirty Years. || Like his Father Ptah-Tnaen [*the god of Memphis.*] The Son of the Sun: Ramessu Meri-amun [*that is to say, the Friend of the God Amon of Thebes*]. The Sun created him, || To Cause Great Rejoicing in the City of On, and || To fill with Riches the Sanctuaries of his Creator. || The Lord of the Two Worlds: Ra-user-ma, || The Chosen One of the Sun. || The Son of the Sun: Ramessu-Meri-amun, || Who gives Life of all Stability and Purity || To-day as ever after.

EAST SIDE. LEFT-HAND LINE.

Horus: the Strong Bull, || Son of the Sun-God Kheper [*that is, of him who exists*]. || The King of Upper and Lower Egypt, || Ra-user-ma, || The Chosen One of the Sun. || The Golden Horus: || Rich in Years; Grand in Victories. || The Son of the Sun: Ramessu Meri-amun. || He came out from the Belly, || To receive the Crowns from the Sun God Ra, || Who created him to be the Sole Monarch. || The Lord of the Two Worlds Ra-user-ma, || The Chosen One of the Sun: Ramessu Meri-amun. || The Reflected Splendor of || The God Tum || Like the Sun.

SOUTH SIDE. LEFT-HAND LINE.

[*So effaced as to be illegible.*]

WEST SIDE. LEFT-HAND LINE.

Horus: the Strong Bull, || Friend of Justice. || The King of Upper and Lower Egypt; || The Son of the Sun; || The Creature of the Gods, || Who [*has taken possession of*] the Two Worlds ||. The Son of the Sun: Ra-user-ma Meri-amun; || The Friend of the City of the Sun; || Never before was done what he did for the city of On. || His Memory is forever fixed in the City of Tum [*Pitum*]. The Lord of the Two Worlds: Ra-user-ma. || The Chosen One of the Sun. || The Son of the Sun [*Ramessu-Meri-amun*] || Who gives Life.

NORTH SIDE. RIGHT-HAND LINE.

Horus: The strong Bull.|| The Son of Tum.|| The King of Upper and Lower Egypt.|| Ra-user-ma.|| The Chosen One of the Sun.|| Lord of the Diadems of the Vulture and of the Ser-

pent.‖ Protector of Egypt.‖ Chastiser of Foreign Nations.‖ The Son of the Sun. Ramessu Meri-amun.‖ The Conqueror,‖ Who with his Own Arms ‖ Performed Great Deeds ‖ in the Face of ‖ The Entire World Assembled.‖ The Lord of the Two Worlds: Ra-user-ma.‖ The chosen one of the Sun. ‖ The Son of the Sun: Ramessu Meri-amun, ‖ Who gives Life of all Stability and Purity ‖ To-day as ever after.

EAST SIDE. RIGHT-HAND LINE.

Horus: The Strong Bull, ‖ Friend of the Sun-God Ra, ‖ The King of Upper and Lower Egypt.‖ Ra-user-ma, ‖ The Chosen One of the Sun.‖ He has taken possession of the Two Worlds.‖ The Son of the Sun: Ramessu Meri-amun, ‖ A handsome and Kind-Hearted Youth; ‖ He is as Resplendent as is ‖ The Solar Orb in the Horizon.‖ The Lord of the Two Worlds; Ra-user-ma. ‖ The Chosen One of the Sun.‖ The Son of the Sun: Ramessu Meri-amun.‖ The Reflected Splendor of the God Tum ‖ Who gives Life.

SOUTH SIDE. RIGHT-HAND LINE.

Horus: The Strong Bull, ‖ The Companion and Friend of Justice. The King of Upper and Lower Egypt: ‖ Ra-user-ma: ‖ Lord of the Periods of Thirty Years, ‖ Like his Father, the God Ptah; ‖ Lord of the White Wall [*name of the Citadel of Memphis*]. The Son of the Sun: Ramessu Meri-amun.‖ The God: The Divine Being. The Terrestrial Star of the City of the Sun-God Ra, ‖ Which is sustained by the deeds of ‖ The Lord of the Two Worlds: Ra-user-ma.‖ The Son of the Sun: Ramessu Meri-amun, ‖ Who gives Life.

WEST SIDE. RIGHT-HAND LINE.

Horus: The Strong Bull, ‖ the Son of the Sun-God Ra.‖ The King of Upper and Lower Egypt, ‖ Ra-user-ma ‖ The Chosen one of the Sun.‖ The Golden Horus: ‖ Rich in Years; Grand in Victories.‖ The Son of the Sun: Ramessu Meri-amun. ....

The Lord of the Two Worlds‖ Ra-user-ma‖ The Chosen One of the Sun [Ramessu Meri-amun].‖ .... Like the Sun.

At the foot of the four faces of the obelisk there is a horizontal line of text which reads: "May He Live!—The Gracious God: Ra-user-ma — The Chosen One of the Sun — The Gracious God; Ramessu Meri-amun."

On the north, east and west faces, toward the edges, near the bottom, is the official title of Usorken I. (son of Sheshonk, the Biblical Shishak, 933 B.C.), in much smaller characters than the other inscriptions.

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SIOUAN FOLK-LORE AND MYTHOLOGIC NOTES.

Some Omahas have said that there were several hundred myths in circulation among their own people and the Ponkas. Of these, some are common to two or more tribes of the Siouan or Dakotan Family, and to this class special attention is invited. The following are told by Omahas, Ponkas, and Dakotas: Ishtinike's adventures with the turkeys, etc., (corresponding to the Dakota myth of Un-kto-mi and the geese, and the Kansas myth of the Man-in-the-moon and the turkeys); the creation of rabbit's son from clotted blood (the Blood-clots Boy, son of the Badger, in the Dakota myth); the adventures of that hero with Ishtinike, resulting in the death of the latter. The following are common to Omahas, Ponkas, and Otos: How the Rabbit killed the Black bear; how he overcame the Muskrat; how he killed the devouring Mountain; an adventure of the Orphan as a rabbit; how the Buzzard's head was deprived of feathers by Ishtinike; the adventure of the chief's son with the Snake-woman and the Thunder-men. Certain parts of the last, remind one of the story of the Fair Melusina, as given by Goethe. Told by Omahas, Ponkas, and Osages: How the rabbit killed the devouring Mountain (see above); the Coyote and the Buffaloes (of which there are also Dakota and Kansas versions); and the Raccoons and the Crawfish. Several myths published in the Iapi Oaye (Word Carrier), a Dakota paper, may be noticed hereafter.

The Rabbit was the great deliverer of mankind, who resorted to magic to gain his ends. Though he was sometimes killed, he was restored to life. He created a son from clotted blood, and the latter was even more powerful than his father, for it was he who rescued his father by killing the tyrant Grizzly bear, and subsequently caused the death of the deceiver, Ishtinike, by beating a magic drum four times. In the corresponding Dakota myth, it is the Badger, who made the son from clotted blood, and of this Badger's son I have gained one Omaha myth.

The principal opponent of the Rabbit was *I-shtinni-ke* (Iowa), *I-shchin-ke;* Kansas, *I-shchi-ge*, answering to the Dakota, *Unkto-mi*. Now ishtinike means "*a monkey*," and unktomi "*a spider*." The Iowas say that *Ishchinke* was the son of *Pi*, the sun, and was expelled from the upper world for a crime against his father. (See Gen. ix, 22.) To him they ascribe the introduction of their war customs, and of all the bad habits which they had contracted prior to the coming of civilization. He was a very cunning person, who almost always tried to deceive the human race and their friends. Only one exception is recorded, told in the Omaha myth of the Deserted children.

Though a great deceiver, he was himself overreached on several occasions, as seen in the myth of *Ishtinike*, the turkeys, turtle, and elk. In the story of the Four Creators, *Ishtinike* is shown as trying to imitate them, and as making numerous blunders.

Another hero was *The Orphan*, who married a Buffalo-woman, slew a water monster with seven heads, changed himself into a rabbit, etc. He and *Hin-khpe-a-gdhe* (sticks a plume in his hair) are hardly differentiated. The latter won his victories by means of his magic plume, as did also the man who married the Buffalo woman and the Corn-woman.

Animals assumed human shape, and some human beings took the forms of animals! Thus *Hinkphe-agdhe* was changed into a mangy dog by one of the bad men; a young girl who had a grizzly bear for a lover became a grizzly-bear-girl after his death; there were Buffalo-women and a Corn-woman; a Snake-woman; a Snake-man, who was a magician and a cannibal; and a Red-bird who became a man, and carried off a woman to his house beneath a lake.

Mythical Explanations of Phenomena.—Rivers were caused by the incessant weeping of *Ha-ghi-ge*, as he went in search of his little brother, who had been slain by water monster people. Animals were named by four brothers, when the latter made a mountain split asunder, finding the animals within and their sister a prisoner.

The rabbit has a singed spot on the back of his neck, because, when Ma-shchin-ge, the Rabbit, caught the Sun in a trap, the latter being scorched the hair on the neck of the former, as he stooped to cut the bow-string forming the trap. The buzzard owes his bare head and neck to the behavior of his mythical ancestor, when caught by Ishtinike. Snow was made by U-sni, the Male Winter, who puffed several times into the air when he left his lodge. The winters are not so cold now, because the Male Winter was killed by the Rabbit. Thunders are now found in the sky in warm weather, because they were banished thither by the chief's son (when he sought for the Snake-woman), who told them to cool the earth (by sending rain), when men needed it. The Sun is now in the sky because he quarreled with the Moon, when both were on earth; so they determined to separate and go to the upper world. The Moon is a woman, who carries a water kettle on her left arm. (The Kansas say there is a man in the moon, whose abdomen is so large because he ate so many turkeys when he came down to earth.) The catamenia originated from an act of the Rabbit: he threw part of the slain Grizzly bear at his grandmother (the Earth). Gravel and stone have been found all over the world since Ties-stones-to-his-ankles pushed over a huge rock which overshadowed a village. Wind was made by large serpents, when they opened their mouths. Rain was made by the Big turtle, as told in the

story of the Rabbit and the Muskrat, of which I have only the Oto version. Earthquakes were caused by the yelling of the Rabbit, as he went to deprive the Grasshopper of tobacco. (See Amer. Antiq., III. p. 24. Oct., 1880.)

WASHINGTON. D. C. J. OWEN DORSEY.

[TO BE CONTINUED.]

EMBLEMATIC MOUNDS.

THE ANIMALS IDENTIFIED BY THE EFFIGIES.

The task of identifying the animals represented by the effigies contained in the emblematic mounds, is the one which we have set before us.

I. The importance of this work will first engage our attention. This will be seen from several facts:

1. There is much ignorance in reference to the emblematic mounds, and some have doubted whether they contain animal effigies.* An author who has published a work upon "Mound Builders," identifying them with the Indians, has made the astounding assertion that there are no effigies in the mounds. This seems strange, for Dr. I. A. Lapham published a work over thirty years ago, in which animal effigies were shown in great numbers. This work is deserving of all praise, as the surveying and plotting were in the main correct. There were, to be sure, many mistakes made by Dr. Lapham, especially in his identifications, as he seemed to lack the faculty of imagination, or some other equality, which should have enabled him to trace the resemblances in the right direction. He called panthers, lizzards, and birds, crosses. But other animals he did recognize and the work done by him is worthy of confidence. Certainly, those who have never seen the effigies should be backward in denying his statements, for similar skepticisms and denials would overthrow science altogether.

2. The interest in the mounds would be increased were we able to identify the effigies. There is a great lack of interest in the mounds, even on the part of those who ought to be familiar with them. Hunters and farmers pass over these effigies without noticing them. If they notice them, they do not recognize any animal shape in them, and many of them never dream that they contain animal effigies.

The first work should be, to trace out the shapes and see what

* Lucien Carr in Geological Report for Kentucky.

resemblances there are in the effigies. Possibly these resemblances would lead people to realize the importance of preserving the mounds as they are.

There is a wonderful rage for relics, and the first impulse is, to dig into the mounds. This, however, destroys the effigies.

The effigies as works of art, are worthy of admiration, and will in the future be regarded as great curiosities.

Many of these mounds are situated near the lakes, where there are places of resort. Visitors from a distance are attracted to the lakes on account of their beauty. The effigies should be preserved. If the interest shall increase they will be Visitors should be led to recognize the effigies, and not allowed to destroy the mounds.

3. There are many absurdities in reference to the objects represented by the effigies which should be corrected. These absurdities sometimes appear in public print, but more of them are held in private and circulated among unthinking people. Some who are familiar with the mounds imagine that they see in them effigies of common domestic animals, such as horses, sheep and dogs, whereas a single thought ought to lead them to realize that the builders of the mounds would not have made effigies of these animals. They certainly could not have been familiar with them, unless they built the mounds after the advent of white men. The recognition of deer, weasels, buffalo, antelopes and other wild animals is, undoubtedly, correct. These animals were common at the time when the effigies were constructed. All such identifications are to be welcomed, for, by the means, we may ultimately determine, what wild animals did exist here at the time the effigies were erected.

The fauna has greatly changed, even within fifty years, but the mounds are constant reminders of what it once was. Instead of horses, there were panthers; instead of cattle, buffalo; instead of sheep, wild cats and bears. There is a slight resemblance between the domestic and the wild animals, so that it is not strange if the effigies of the one are mistaken for those of the other, but by tracing the shape of the animals, we may be able to correct this mistake, and ascertain what fauna did prevail.

4. The recognition of the animals in the effigies will clear up some *disputed points.*

a. Dr. Lapham, in his celebrated work, has maintained that there are among the mounds the figures of crosses, of dragons, and other symbols, which exist only among civilized races. The majority of these figures, however, we think will prove to be nothing but birds. Yet his statements in reference to them are taken without question. A recent writer, upon "Prehistoric America,"* has quoted these statements, as if they were true, and

* Articles by Prof. F. W. Wright, published in the Chicago Advance, quoted in the Kansas City Review for March, 1884.

his quotation has again been published by a journal of considerable repute. It seems surprising that gentlemen who are considered authority, should imagine that the Mound Builders were familiar with the European symbols, and that they incorporated into their effigies the traditions which are only peculiar to Christian nations. There are, to be sure, those who maintain that this continent was settled by Indo Europeans, and that these symbols of the cross and dragon and serpent are Celtic, or at least, Aryan in their origin.

Dr. J. S. Phene, of London, has visited this country, and explored the mounds. He thinks that he has recognized not only these symbols, but animals, which are peculiar to European or Asiatic countries, as for instance the camel and the elephant.

b. The great point of dispute, is, that concerning the *elephant.* It is well known that there is what is called an "elephant mound" in this state. All those persons who hold the European origin of the mound builders, would readily maintain that both the elephant and camel can be found in the effigies. Others, who do not believe in the European origin are, however, ready to maintain that the mounds were built so early, that the people who erected them were familiar with the mastodon. And so they think that this effigy proves not only the antiquity of the mounds, but the recent existence of the mastodon.

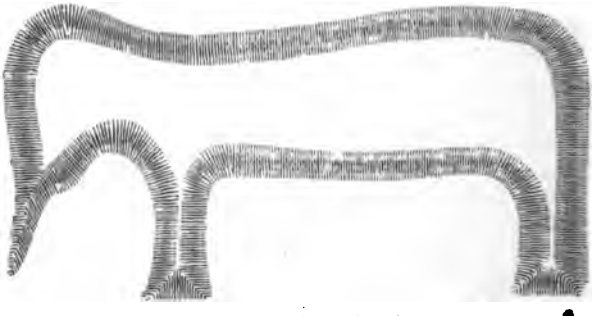


Fig. 1. Elephant Mound near the Wisconsin River. JARED WARNER.

These are important points, but they should be studied carefully. We are not inclined to dispute the evidences which may arise from other sources, but we object to hanging a decision upon so uncertain a thing as an effigy.

Were we able to identify this as an elephant, one very important fact would be fixed for a certainty, but this far the identification remains doubtful. The chief authority for the existence of the elephant effigy is to Mr. Jared Warner, who published the report of it in 1872.* The identification of the effigy was, however, in accordance with a popular notion, and may not have been as carefully and critically made as perhaps it would be

* See Smithsonian Report, 1872.

at the present time. The importance of carefully surveying and plotting the mounds is seen from the fact that so many points of great interest are made to hang on the identifying of a single effigy like this. Unless there are other mounds which contain effigies of the elephants, we should not be inclined to give a decision in reference to these points, but we should be convinced that the identifying of the animals is of prime importance.

II. We propose to show what difficulties there are in the way of properly identifying the effigies and how liable we are to make mistakes: 1. The indefiniteness with which the animal shape is represented in the mounds. Embossed figures in the soil are not like figures carved in stone, for they cannot assume as clear cut shapes. It is true that the relief of the effigies is always bold and striking, and that the shapes of the animals are depicted by the swells and depressions in the mounds so that every portion of the effigy may be regarded as a close imitation of every part of the animal, the earth mould fairly representing the form and shape. Yet, notwithstanding all this, the effigy may fail to impress an image upon our eye so as to convey the idea as to what animal was actually intended by it. This lack of definiteness is owing partly to the manner in which the animals are represented. The four-footed animals are represented in profile, with the legs upon one side, but the legs are not separated. In this respect the effigies differ from inscriptions. We give a few illustrations of this. Fig. A is a specimen of an inscribed image found upon the side of the cave at West Salem.

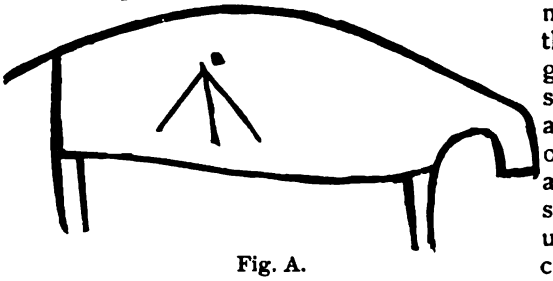


Fig. A.

The drawing was prepared by Rev. Edward Brown. It probably represents a bear. Fig. B is also the figure of a bear found on Lake Mendota, described by Dr. DeHart. This figure, however, is not correctly drawn, as the effigy itself has the legs united, but the person who plotted it took the liberty to separate the legs, and to put the ears and tail and feet of the animal into the picture. It is easy to recognize the bear in the picture, but not so easy in the effigy. Fig. C more correctly represents the effigies as they really exist.

Fig. B.

This was plotted by Dr. I. A. Lapham. It represents the

bear. The figure shows how symmetrical the effigies are, but at the same time reveals the indefiniteness of the animal shapes.

Fig. C.

It is easier to recognize the bear in this effigy, than in the cave inscription. But there are many mounds which do not contain as close resemblance to the animals as this does.

2. Another source of error in identifying the effigies is a want of familiarity with the animals. We have referred to this before, but will give an illustration of it here. The inscriptions upon the cave afford an illustration. The gentleman who described these figures, undertook to give the names of the animals — some he gave correctly. He called them the buffalo, the otter, the rabbit and the lynx. The buffalo can be recognized by its horns, the otter by its tail, and the rabbit by its ears; but the lynx is not right, for this animal has no tail, and the animal in the picture has a tail. It may be a wild cat, but is not the lynx. The same gentleman has imagined that he saw figures of mastodons and of the hippopotamus, but examination of the figures shows that the proboscis is lacking from the mastodon, the sign for speech having been mistaken for the proboscis.

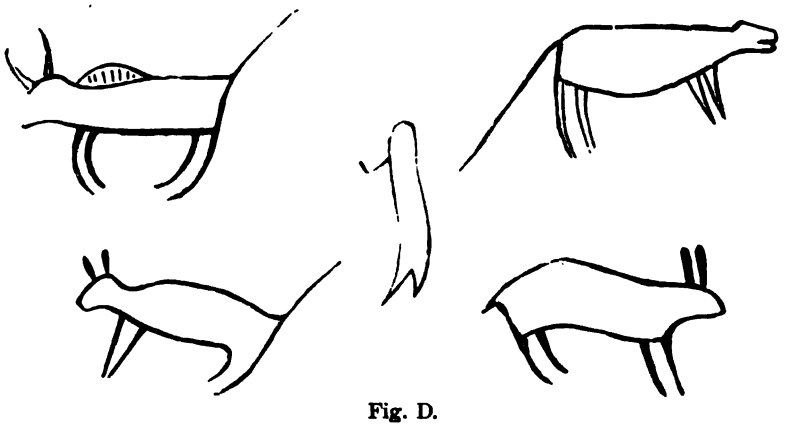


Fig. D.

The figure of the hippopotamus is not to be found, but that which was mistaken for one is probably a bear.

It is not strange that these figures were not understood, for naturalists make great mistakes in identifying animals from figures.

It was the confession of a prominent geologist, made to the author, who is familiar with the emblematic mounds, that he could not recognize any animal resemblances in the effigies.

Possibly this was owing to the lack of familiarity with the animals. It may have been, however, owing to the lack of imagination. This brings us to a third source of error.

3. There are difficulties which arise from the imagination. The effigies are very likely to be misinterpreted, unless we are especially careful. Preconceived notions may mislead us. Imagination is here both a useful and a dangerous faculty. It conveys to us as nothing else can, the idea of resemblance, the image in the effigy suggesting the image of the animal, and is useful in this respect. There are many cases, however, where part of an effigy will suggest the same part in an animal, and without stopping to trace out the image and verify the fact, imagination leaps forward to picture the whole animal, and, perhaps, by that very act, leads the observer astray. In this case imagination is dangerous. The plotting of mounds is a preventive of these mistakes. A surveyor who is able to take accurate measurements and then to plot the effigy, is most likely to be accurate in his conclusions. And yet, unless there is some imagination in the surveyor, so that the contour and complete figure can be given, mistakes will result from the very lack of the quality. A mere mechanical plotting will not convey the idea of resemblance.

Imagination is a useful faculty in the reader as well as the plotter. In presenting to the public pictures of the effigy mounds we have used silhouettes. These, however, do not convey any idea of the relief of the mounds; they merely give the shape and outline. Readers must depend upon their imagination to realize how they look when embossed upon the surface of the ground. If our readers will, however, take the descriptions given and then exercise their imaginative faculty, they may be able to recognize the animal shapes and trace the resemblances.

4. Another difficulty in the way of identifying animals is found in the size of the mounds. The pictures of the mounds sometimes convey an idea which the effigies themselves would fail to do. When the mounds are surveyed and plotted and brought down by a scale of inches to a small size, it is easier to decide as to the animal intended than when we are looking at the effigy.

The effigies are generally from 50 to 75 feet in length, and from 15 to 30 feet in width. Where certain portions of the effigy become prominent, as in the case of horned animals, the eye seizes upon these, and so far fixes a resemblance to some animal. If the remaining portion of the body accords with these, the animal can be easily recognized. It matters little whether the prominent parts are heads or tails, these assist the eye and are not easily mistaken. But where the bodies only, are given, the size of the image leads to many mistakes. If there are no prominent marks upon it, the eye fails to seize upon anything that is distinctive, and the image constantly eludes us. It is re-

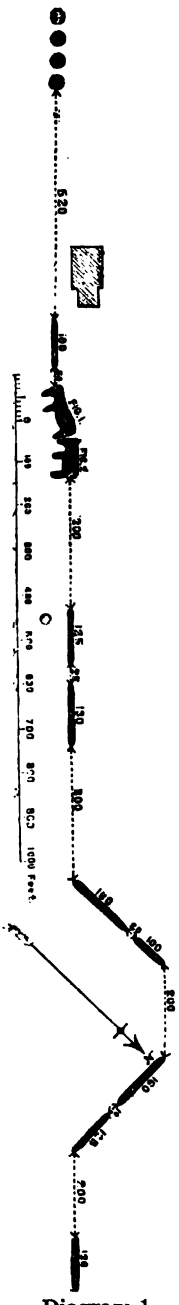


Diagram 1.

markable how many mistakes we may make from this cause. Take the buffalo as an illustration. If one limits his vision to the hind quarters, it is easy to mistake this animal for an elephant, as the hind quarters of the elephant resemble that of a buffalo. The correction of the mistake, to be sure, would come if care was taken to notice the prominent mark of the buffalo, the horns upon the head, but carelessness here might result in carrying out the delusion.

We have been informed by the owner of the farm where the celebrated elephant effigy is, that there was originally such a prominence above the head, although he supposed that it represented the "ear" of the elephant.

We give illustrations of this point by a series of cuts taken from the Smithsonian.* They represent mounds which were surveyed by Moses Strong, a procession or chain of them being found on land adjoining the residence of Hon. Robt. Glenn, in Grant county, not far from the line between sections 19 and 30 of T. 6, R. 6 W. (See Diagram 1.) We quote his words:

"The mounds seem to be connected, but appear in several localities as component parts of one grand chain or procession of animals, extending nearly a mile. The first seen are four round mounds in the orchard near the house. Then a space intervenes, and a long mound is seen. Near to this are two effigies, slightly different in shape and size. Pursuing a northeasterly course a remarkable series of long straight mounds, effigy and circular mounds being entirely absent.

The line conforms to the crest of the ridge in all its irregularities, and the mounds command an extensive view on both sides of the ridge.

Proceeding across the crest of the ridge nothing is seen for about half a mile, until, the first of the mounds, Fig. 3, Diagram 2, is found followed by Fig. 4 and 5, at short intervals. These are somewhat similar and not unlike Fig. 2, Diagram 1. Following Fig. 5 is a row of 20 round mounds, each 25 ft. in diameter, 5 or 6 ft. high and about 25 ft. apart. They are are arranged in lines conforming to the crest of the ridge and present a peculiarly striking appearance. At the northern end of the row, the ridge turns abruptly to the

* See Smithsonian Report for 1876.

west, and a change in the mounds takes place, the effigies being now headed in the other direction, the effigies at the south end of the mounds being headed to the south, but these to the west. Proceeding westward along the ridge, Fig. 7 is seen. The animal represented by this mound appears to have a short tail and horns, and is probably designed to represent some species of deer."

Mr. Strong says, "It is one of the few effigies in which we can trace a resemblance to some particular animal." A long interval now occurs, until at the extreme end of the ridge, two effigies, Figs. 9 and 10 are found. From this point a beautiful view of the Mississippi and Wisconsin rivers is obtained.

One peculiarity about the group is mentioned by Mr. Strong — it is this — that a certain uniformity of distribution and arrangement exists among the mounds, indicating a preconceived plan or custom. The effigies close the series on the western end as they begin the series on the southern end. The location of the long mounds are by themselves, the circular mounds are by themselves, and the effigies also are located in groups by themselves.

The animals in this group of mounds seem to be uncertain, and Mr. Strong, who has surveyed them, did not undertake to identify them. Judging from the diagrams, we should say that they were effigies of buffaloes, for the marked characteristics of the buffalo effigies may be seen in them, viz., the projection representing horns above the head. Yet any one who will study

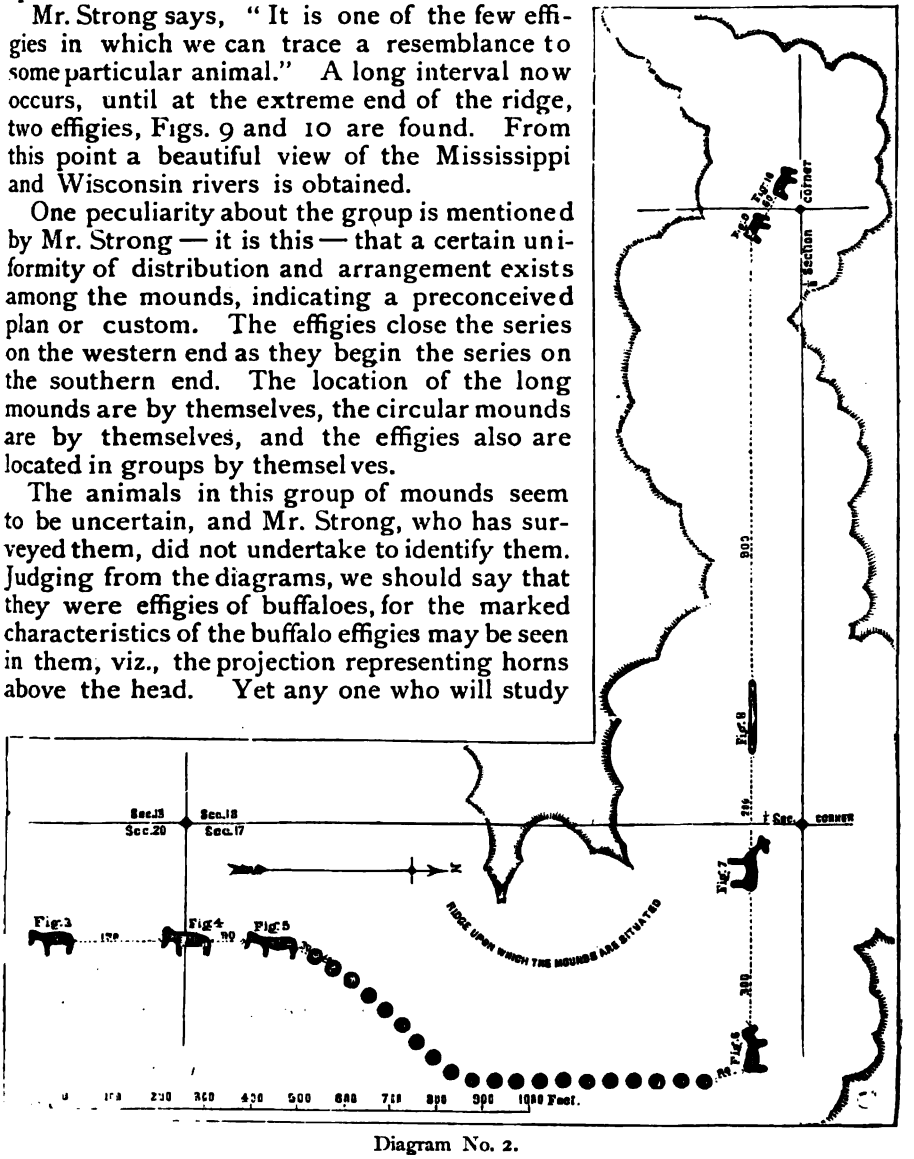


Diagram No. 2.

the shape of the effigies in this group will see how easily the animals

might be taken for elephants. The mounds are in the same locality with the celebrated elephant mound. If these are buffaloes, we should incline to say that that was also. There is this difference in the locality. These mounds are on the bluff, where the soil is more compact, and where the effigies were less likely to be washed. The effigy of the elephant is, however, on bottom land, where the soil is sandy. It is situated in a swail which is subject to floods. It is also raised above the water level above the Mississippi river, but about eight feet, and although situated some distance from the river, might in some seasons be flooded by water, which would set back from the river.

In reference to this elephant mound, we would say here, that there is considerable uncertainty about it in our mind. The mound has been plowed down, and flattened, so that its outlines cannot be definitely traced. Yet, judging from the character of the soil, and the shape of the effigy, we can imagine that even at the time of its survey and plotting, the shape of it might have been very deceiving. We give a cut to illustrate. It will be noticed that the shape is very much that of an elephant, but no more so than some of the effigies seen in the diagram. The main question is, whether the proboscis is really there. The figure drawn by the surveyor gives the proboscis, but it will be noticed that it represents it as a slightly elevated ridge and is somewhat obscure. We can imagine how the washing of the sandy soil could produce such a ridge, when there was no intent, on the part of the builders, to represent it. Taking away this part of the animal and adding to it the "ear" (probable horns), which the owner of the land says, was formerly seen above the head, we can easily make it into a buffalo. Our own opinion is that it was the effigy of a buffalo. We give, however, the testimony of those who have surveyed the effigy, and leave it for the readers to decide, merely adding this remark, that the gentlemen might all have been mistaken, especially as they seem to have had a preconceived notion in reference to it.

The figure is from a survey taken on the ground by Mr. Jared Warner, Alexander Paul and J. C. Scott, in October, 1872. Mr. Warner says: "This mound has been known here for the last twenty-five years as the 'Elephant Mound.' The mound is situated on the sandy bottom lands of the Mississippi, about eight miles below the Wisconsin river. It is situated in a shallow valley, on either side of which, about twenty rods distant, are grassy, sandy ridges, about fifteen feet higher than the land where the mound stands. The total length of the effigy is 135 feet; from hind feet to back, sixty-five feet; from fore feet to back, sixty-six feet; width across fore legs, twenty-one feet; across hind legs, twenty-fourfeet; from end of proboscis or snout to neck or throat, thirty-one feet; from end of proboscis to fore legs, thirty-

nine feet; space between fore and hind legs, fifty-one feet; across the body, thirty-six feet; general height of body above the surrounding ground, five feet. The head is large, and the proportions of the whole so symmetrical, that the mound well deserves the name of the 'Big Elephant Mound.' Is not the existence of such a mound good evidence of the existence of the mastodon and the mound builders."* Another person who visited this effigy and represented it as an elephant, is Mr. Moses Strong, who says, "It is known as the 'Elephant Mound,' and as it lies upon the ground it resembles an elephant or mastodon much more closely than any other animal,† and the resemblance is much more perfect in this instance than in any other effigy. This mound, in common with all the rest in the group, has been under cultivation, and on account of its size special efforts have been made with plows and scrapers to bring it to the level of the adjacent field. Its size alone has protected it. These efforts have resulted in diminishing its height, increasing its width and general circumference, and renderng its outline somewhat indistinct."

III. The aids towards the recognition of the effigies will next engage our attention. 1st. First among the aids is the method of classification of the animals visible among the effigies. A few words in reference to what has already been done will be in place here. In a former paper we have spoken of the classification of the animals visible among the effigies. This classification is the more remarkable from the fact that it prevailed among so rude and primitive a people. But it, at least, proves to be a great aid to us. The animals are classified according to their habits, or the element in which they have their existence, the land animals being represented in one way, the amphibious animals in another, the water animals in another, and the birds, or creatures of the air, in still another. These four classes have been identified, the manner of erecting the mounds being so distinctive that there is no uncertainty in reference to them. A subdivision of the land animals has also been referred to, and many individual varieties have been identified under two separate heads, the grazing animals being recognized by their horns, and the fur-bearing by their tails.

There are four classes of animals which may be recognized in the effigies. This we have already referred to, and we maintain there is no uncertainty in reference to it.

Our previous paper described only the land animals. We now propose to show the manner of representing the three other classes of animals, viz., the amphibious, the water animals, and the birds or creatures of the air. The plate given herewith, represents a group of mounds which was discovered and has been

* Smithsonian Report, 1872, page 416.

† Smithsonian Report, 1876, page 431.

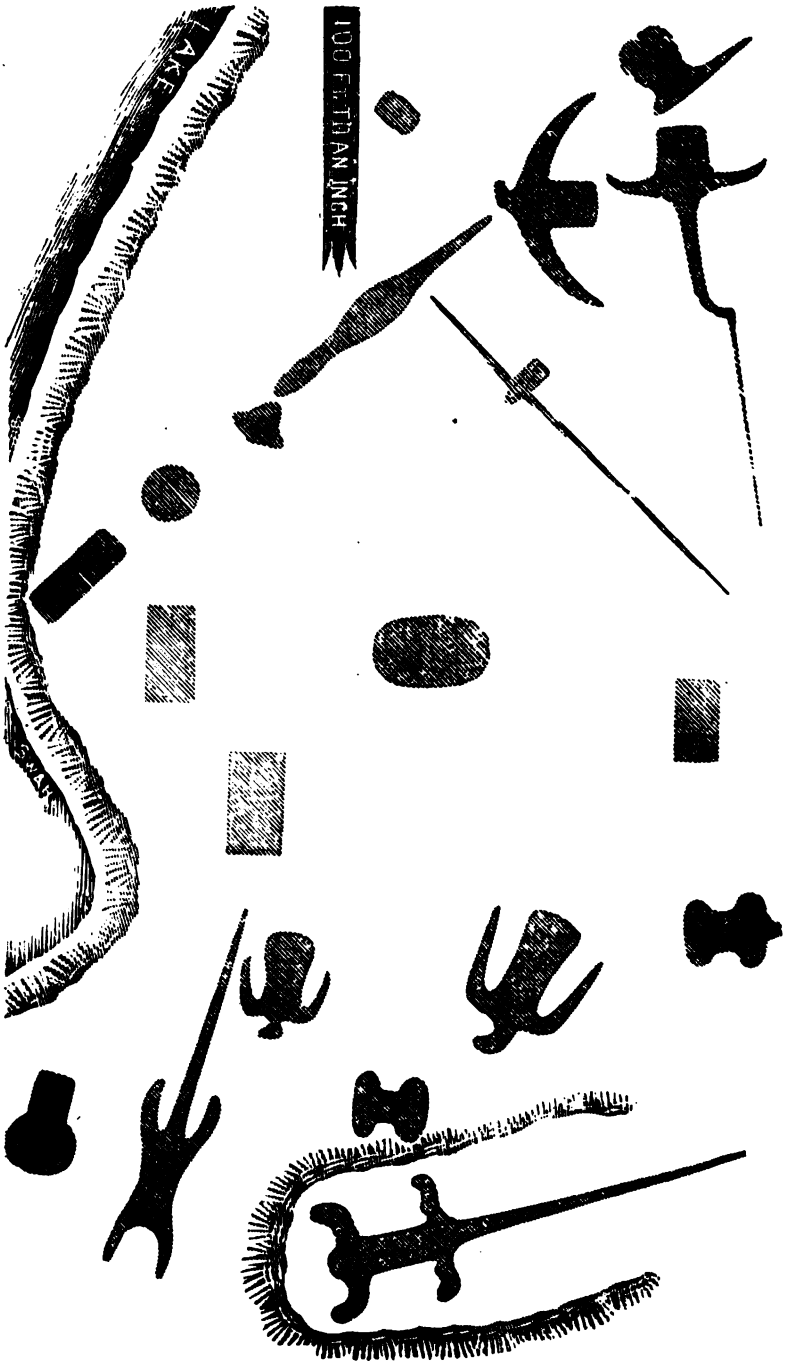


Diagram 3. Effigies at Lake Koshkonong. PEET.

plotted by the author. It is situated on the banks of Lake Koshkonong, and covers a plat of ground about ten acres in extent. The effigies vary in length from 75 to 200 feet, and in width from 15 to 30 feet. A great variety of effigies is presented by the group, every animal being different. The animals which we have identified are, first, the lizard, the muskrat, a turtle, two eagles at one side, and on the other side a wood-cock, a heron, a hawk and an eagle spread, a fish and a small bird. The mounds in the centre are not animal effigies, but were probably either burial mounds or mounds erected as foundations for houses, the effigies of the animals being placed on either side as protections. Possibly the group indicates a place of worship or of sacrifice or a sacred place of some kind. It is situated not far from a group which has been described in our former paper as a place of sacrifice and as an outlook station, but in the background on the bank of a bay, as if the intent was to make it less conspicuous and more private in its character. The object of the group is, however, not to be discussed here, but the character of the effigies. The reader will notice that the animals are represented mainly in motion and in the motion which would be peculiar to animals inhabiting the different elements. The lizard and muskrat are represented as crawling or swimming, the birds as flying and the fish as floating, the three classes of animals corresponding to the three elements. The reader will also notice the different methods of representing this. The amphibious animals, such as the lizard, turtle and muskrat, all are represented with their legs upon both sides as if in the attitude of swimming. The birds on the other hand, all have their wings extended as if in the act of flying. The fish is represented with the body alone, no particular part of this animal being prominent. The effigies are all good imitations of the animal shapes; the attitudes of the animals are also natural, but the manner of representing the different classes of animals is the most worthy of study. This is uniform — all the effigies which we have observed have the same characteristics, the manner of representing the animals having become conventional and fixed.

It seems strange that the different orders could be so represented and indicated so well, but the builders of these effigies were evidently artists. They understood the division or the classification of the animals, and were able to represent it in the effigies. We do not claim that they had any scientific or artistic training, but there were natural powers among them which brought them to an intimate acquaintance with the animals and which gave them much skill in depicting them. Their knowledge was that which came from observation and their skill from the imitative faculty. In these respects they excelled, even if they were crude and untrained in others. This has been

noticed in other cases. The rude drawings which have been discovered on bone and horn relics, taken from caves and gravel beds in Europe, indicate much artistic skill. The same is true of the pottery vessels found in this country. The mounds, however, show an unusual amount of knowledge concerning the animals. How the classification originated we cannot tell. It is possible that it was the result of observation, merely. The inductive faculty, however, was evidently possessed by these people in common with other human beings; and what is more, their habits of observing developed it to a high grade. They seem to have more skill in this respect than many who are far more cultivated. By observing the animals as individuals they may have come to perceive the resemblances between them, not only in appearance, but in habits, motions, attitudes, their familiarity with the animals, serving for them what a knowledge of the structure does to us. This would be the first stage.

The next stage would be that they would notice that the animals which inhabited the same elements, either land, water or air, universally have the same appearance. In erecting a likeness of them they would indicate this fact, and make the effigy of all the animals representative of the classes, those dwelling in different elements having different shapes. This is a true classification, and as far as it goes, is as good a grouping of the animals as any. It indicates the system of development, as the external appearance and the habits of the animals are known to correspond to the elements inhabited. It does not, of course, represent all the subdivisions, such as the modern scientists have established, but it saves us from uncertainty as to where certain animals belong in the system. Sometimes, to be sure it seems as if the animals were grouped even more correctly, according to this system of classification, the different species being designated by the effigies as well as the orders and genera Perhaps there is only an attempt to portray individual creatures, according to their known shapes. Yet this virtually brings us to the same point in the end, whether the divisions were recognized by the effigy builders or not. Their skillful imitations of the animals lead us to a study which is very similar to that which the naturalists would follow.

There is something suggestive about this method, because it indicates that the shapes of the animals were correlated to the elements in which they dwelt, and the habits of the animals also were influenced by their environment.

The manner in which the different animals move, as well as their general appearance would be correlated. The people who erected the mounds may not have reasoned this all out, but they were true naturalists, as well as true artists. They, by their powers of observation reached the true, system of classification. Representing the animals according to their appearance

either in motion or at rest, they would naturally give the distinguishing traits, and so would unconsciously represent the orders as well as the individuals.

Again, the religious notions of the people may have had some effect upon them. It appears that a system of animism prevailed among them which led them to see not only the forms and to understand the habits of the animals, but to recognize the spirit which controlled them. It was not an individual spirit which they recognized but an ancestral one. Each species was credited with an architypal spirit, which was the general cause of life. The Great Master of life ruled over all animals, but the subordinate masters of life ruled the different classes of animals. There were many spirits or masters.

Everything had its spirit, the trees, the rocks, the streams, the animals. This ascribing a spirit to everything was equivalent to acknowledging a type of life. "Among the North American Indians," says one of the early missionaries, "they say that all the animals of each species have an elder brother, who is, as it were, the principal and origin of all the individuals, and this elder brother is marvelously great and powerful. The elder brother of the beaver, they tell me, is perhaps as large as our cabin."

In whatever way we explain it, however, it is manifest that there was a system of classification among this mysterious people. If there were any doubt in reference to the classification, we think that the facts would dispel them. We shall give a few illustrations, and would call attention to the correctness of the system by which the animals were classified. We have already shown that the land animals were universally represented with the legs upon one side. But the same uniformity can be seen in the other animals, the amphibious always having been represented with the legs upon both sides, the birds represented by their wings, and the fishes and serpents being represented without either wings or legs. These are distinctive of the classes, and can be recognized in all cases. We give a series of figures to illustrate this point. See Figs. 2, 3, 4, 5.

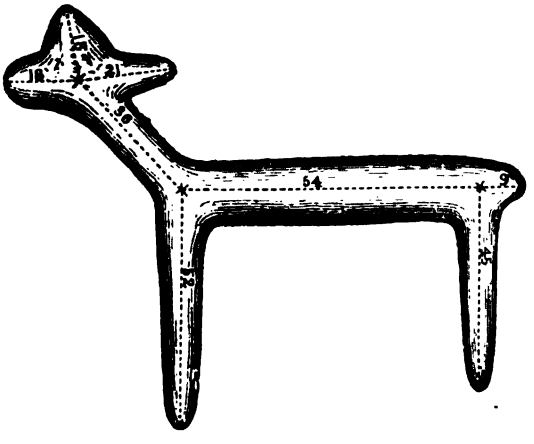


Fig. 2. Antelope in Grant County. STRONG.

These four figures represent the different classes, first, the land

animals; second, the amphibious creatures; third, the birds; fourth, the fishes and reptiles. The reader will notice the peculiarities of the different effigies, the land animals having two projections on one side, the amphibious creatures having two projections on their sides, the birds having single projections on the sides, and the water animals having no projections. These are always distinctive and designate the orders or grand divisions which the animals belong.

The first figure is the effigy of an antelope, and was recognized as such by the surveyor. It was plotted by Mr. Moses Strong, and may be seen in the group of effigies located in Grant county.

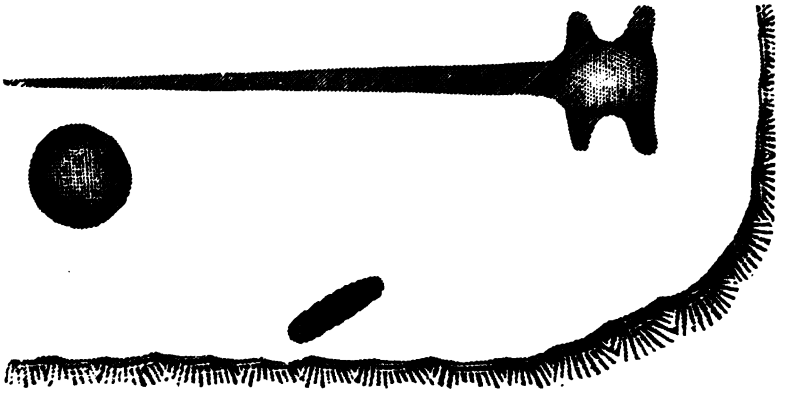


Fig. 3. Turtle at Waukesha — Lapham.

The second represents a turtle which is described by Dr. Lapham, and was found by him at Waukesha.

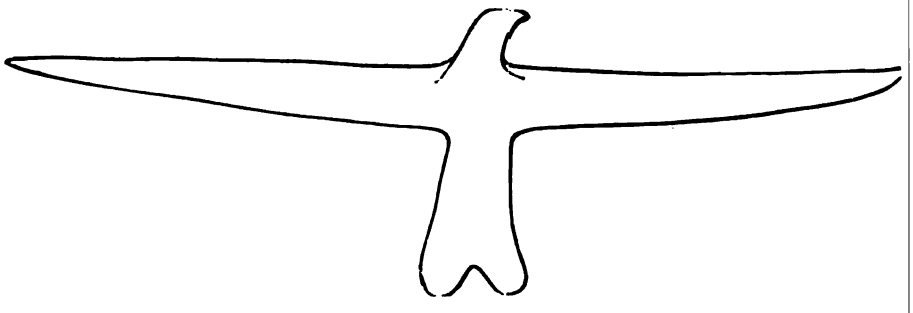


Fig. 4. Eagle at Madison — De Hart.

The third is the effigy of an eagle, which may be seen on Lake Monona, near Madison, Wis. The fourth isthe effigy of a serpent, in association with a bird. This was discovered by Dr. Lapham, on Ripley Lake.

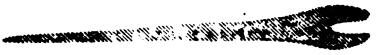


Fig. 5. Serpent at Ripley Lake.—Lapham.

There is one locality where all the differerent classes of animals are portrayed side by side. The bear, representing the land animal, the turtle, amphibious creatures, the night hawk representing the birds, the fish and crawfish representing the water animals. See Figs. 6 and 7.

One peculiarity about the locality is that the effigies are situated on the summit of a series of knolls, the effigies covering

Fig. 6. Mounds on Lake Monona. PEET.

the whole surface of the knoll and giving to it the shape of the effigy.

It is a very remarkable instance; for the shape of the effigies not only show to us the methods of classifying the animals but also the method of making the earth itself, expressive of

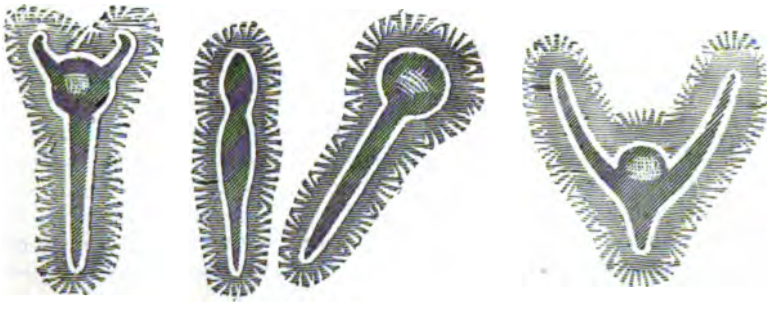


Fig. 7. Mounds on Lake Monona. PEET.

the religious sentiment which oftentimes connected itself with the effigies, a sort of anamistic conception being given in the double image.

2d. The distinctive marks of the individual species given in the mounds are aids in the work of identifying the animals. The individual species were represented by diffcrent representations of the same features — the legs and wings varying according to the species which were intended. This peculiarity

will be seen in the figures which follow. They are figures of turtles, lizards and birds. The turtles being distinguished from lizards by the shape of their legs. The contrast between these will show the different methods of representing the animals.

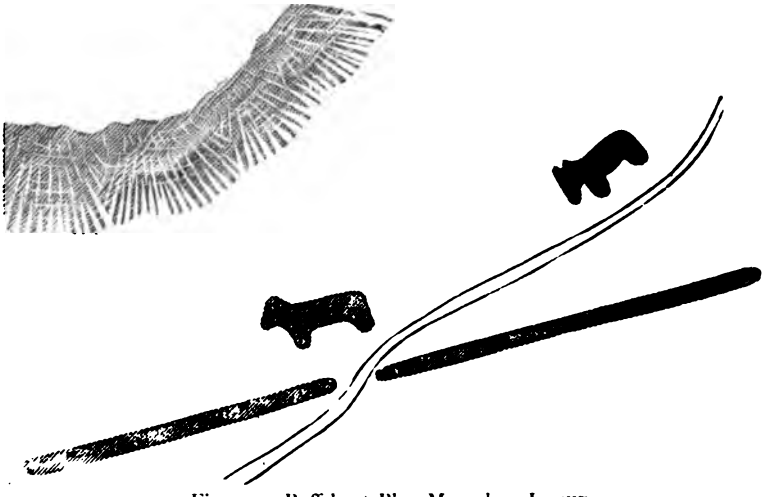


Fig. 10. Buffalo at Blue Mounds. LOCKE.

2. There are other methods of representing the classification of the animals, but these are generally expressive of sub-divisions. These sub-divisions seem to have been recognized, for the different species of animals as well as the genera are marked by the effigies. We furnish several figures to show how the sub-divisions may be represented. These representations do not interfere with the uniformity of method, by which the general divisions are represented, but only show the way in which the species could be indicated. We have seen already how the land animals are sub-divided, but the birds were also sub-divided, according to their species. The diagram (3) which represents the group of birds at Lake Koskonong, will show how these features are brought out, the different kinds of birds being there represented in the effigies. The wings are distinctive of the genus, but variations in the wings and heads and tails show not only the individuals but species. The reader will notice the different methods of representing species among the birds.

We shall now follow the order previously given, taking first, the land animals, next the birds, next the amphibious creatures, and lastly, the water animals. We have referred in a previous paper to the distinguishing mark of two classes of land animals, viz., the grazing and fur-bearing. The horns we found to be distinctive of one class and tails of the other. By these marks we have

already identified a large number of these animals. We give a series of figures to show that these distinctions are carried out by the effigies to a greater extent than are there indicated.

Two effigies have been described by J. Locke and R. C. Taylor, and may be recognized as images of buffaloes. Were there any doubt of it, the horns of one of them at least, would prove this. The effigies are situated eight miles east of Blue Mounds, in Dane county, near a sandstone bluff, and adjoining two long artificial embankments of earth walls. The embankments are 600 feet long, twenty feet wide, five feet high.

Several other figures are given to represent the same point. The distinctive marks of all the classes of effigies can be seen in the diagrams. Two are figures representing turtles and lizards. See Fig. 9 and Diag. 4. These effigies were discovered by the author on a bluff near Beloit, near the state line. One of the turtles has been nearly destroyed by the grading of the road.

Fig. 9. Turtles at Beloit — PEET.

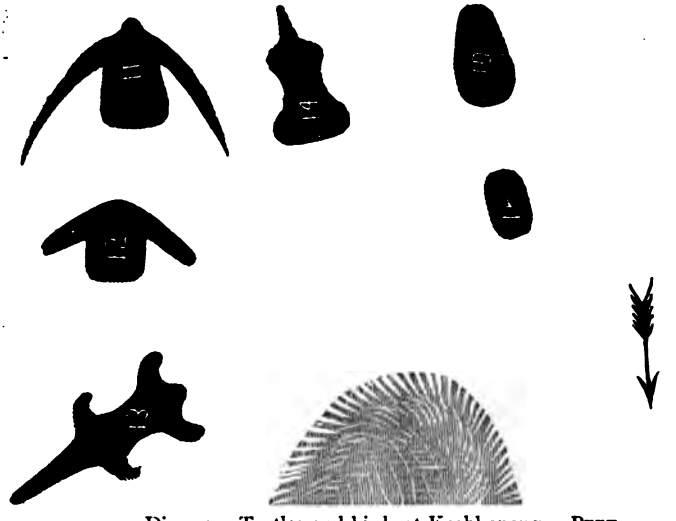
Still another figure representing turtles and birds is given. See Diag. 4. This group was also found by the author at Lake Koshkonong.

The different methods of representing the turtles and lizards, will be seen from these. Turtles are oftener represented with straight projections running at right angles to the body, but these are sometimes crooked. The lizard is also at times represented in the same way, but the narrow, slim body of the lizard can easily be distinguished from the turtle.

3. Analysis of the different parts of the animal figures given in the effigies will enable us to identify the animals.

The long neck of the heron, the short body and long bill of the woodcock, the curved wings of the hawk, and the broad folded wings of the eagle, enable us to identify the particular birds intended by these effigies. In the amphibious animals the distinctive points are generally the legs. These are so shaped that they indicate the particular animal intended. The legs of

the turtle are generally straight and extended from right angles from the body. The legs of the lizzard are generally crooked, and can easily be recognized from their peculiar shape. The legs or the musk-rat are generally bent or folded toward the body in opposite directions. (See Diagram 3.)



Diag. 4. Turtles and birds at Koshkonong — PEET.

It is probable that if we would analyze still farther, take some particular part, such as the head or legs, we could identify the effigies, even where other marks are lacking. For instance, the beaver is an animal which is sometimes represented with a tail so short as hardly to be recognized, and yet the beaver is easily identified by its shape. The effigy of a beaver (see Diagram 5) has been seen by the author, on the bank of Lake Waubasha, in connection with that of an antelope and several birds. The rabbit is an animal which is sometimes seen in effigy. The peculiarity of the rabbit is, that it has long ears and a very crooked or rounded haunch or hind legs. The effigy of the rabbit has been seen by the author, near Lake Wingra. At first, the shape was not recognized, but on a second visit, the peculiar shape of the legs, and the projection above the head. representing the ears, led to the identification of the animal, Dr. Lapham has described a figure which he calls the "elk," but it evidently was a rabbit.* The elk differs from this, in that the head is larger, the neck longer, the horns more erect, and the body more symmetrical. It would seem that the difference between the rabbit and the elk would be easily recognized.

The bear is an animal which is represented in the effigies, but

* See Lapham's Antiquities, page 54, figure 22

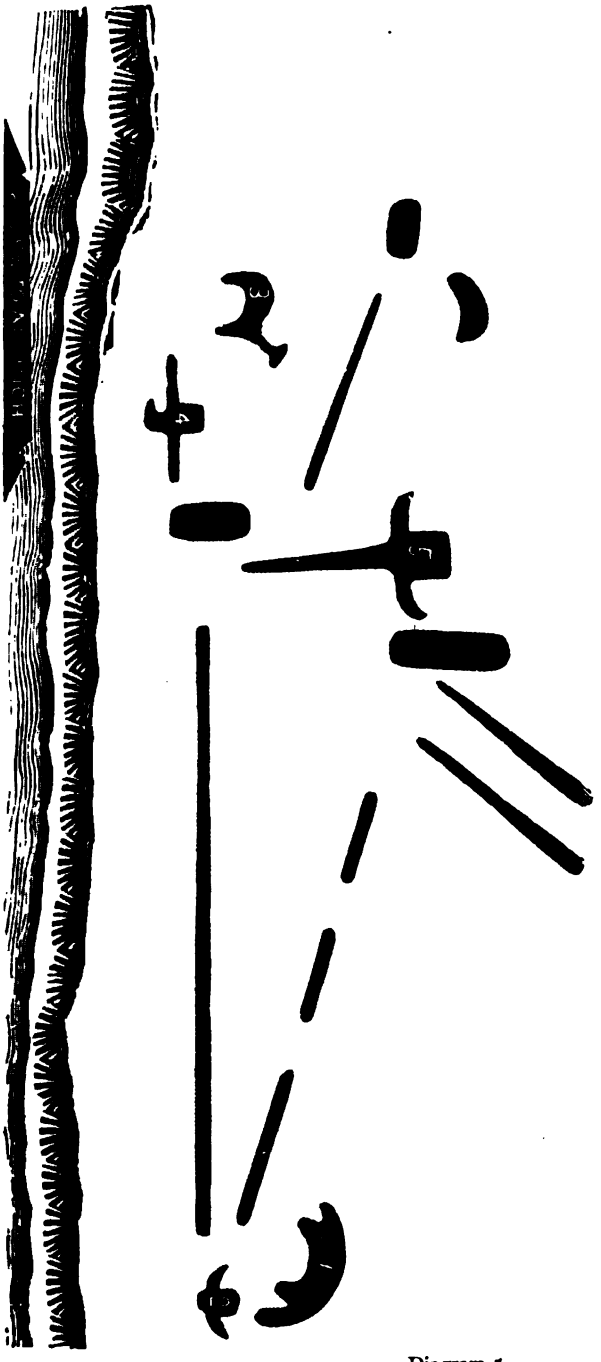


Diagram 5.

is more difficult to recognize and identify than any other. It is known by its peculiar body and head, the hind legs being the characteristic part. The bear is found in a great many different attitudes, and sometimes the attitudes bring confusion into the mind. Yet the large hind leg may be recognized in all the attitudes, and so the effgy be identified. It is known by its peculiar body and head. We give several figures of the bear to show how the distinctive marks may be recognized, even when the attitudes are different.

Two effigies representing the bear, one standing erect with head raised, the other with head down and back raised. The

Fig. 10.

Fig. 11.

contrast between the two is quite marked these two effigies were discovered by S. Taylor, and are described by Squirer and Davis* They were found on the Wisconsin river, near Muscoda, one of them is eighty-four feet long, and six feet high, the other is fifty-six feet long, and about twenty inches high. Dr. Lapham has described a number of bear effigies, one of which seems to be in the attitude of climbing. Its head is turned up, and its fore paws partially raised, but the characteristic hind quarters identify it. It is found on Sauk prairie, near Honey Creek. Another bear effigy is also described by the same author, as situated in the same region, but this bear has the ordinary attitude, as if standing. This figure was recognized by Dr. Lapham, but the attitude of the previous effigies led him to say, "That it would be difficult for the most practiced geologist to determine the genus or species to which it should be reefrred. Another bear was plotted by the same author, which had the front foot remarkably enlarged, yet the hind quarters would indicate what the animal was.† We have discovered the effigy of a bear on the banks of Lake Wingra, near the Charity School. The animal is here represented as standing. Sometimes bears appear before us in effigy having no particulay characteristic marks, and then they are much more diffiicult to recognize. Fig. 12 will illustrate this. This is taken from the plotting by Mr. R. C. Taylor.‡ They are found near the Blue Mounds, in Dane County, eighteen miles from Madison.

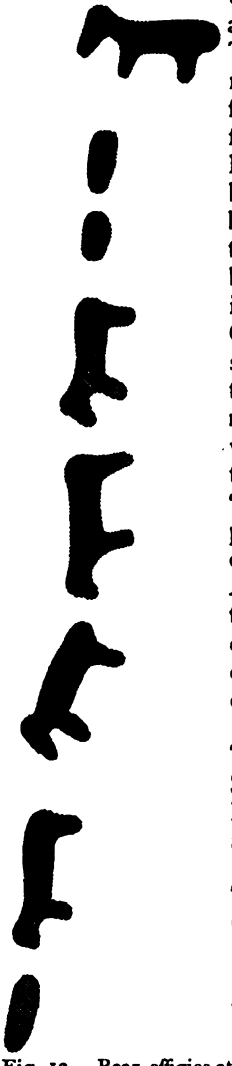


Fig. 12. Bear effigies at Blue Mounds — S. Taylor.

* See Lapham's Antiquities, Plate XLIV, Plate XLV No. 2, No. 4.

† See Smithsonian Contributions, Vol. I, Plate XLIII, XLVI, No. 1.

‡ See Smithsonian Contribution, Vol. I Page, 126.

The group is situated on the great Indian trail and contains six effigies of quadrupeds, six mounds in the forms of parallelograms, one effigy of the human figure, and a small circle. The area comprehended in the map is something less than a half mile in length. It is not easy to make out from the effigies the character of the animals intended to be represented. It has been suggested that they were designed to represent buffalo, which formerly abounded in the vicinity, but the absence of a tail and of the characteristic hump of that animal would seem to point to a different conclusion. They display a closer resemblance to the bear than to any other animal with which we are acquainted. These figures seem to be most prevalent; and, though preserving about the same relative proportions, vary in size from 90 feet to 120 feet. In many others, as at this point, they occur in ranges, one after the other, at regular intervals of most of them.

Fig. 13. Man near Blue Mounds.

4. It should be noticed that the mound builders had a distinct way of representing the human form. The land animals were represented with the legs upon one side, the water animals with legs upon both sides. But the human effigy is represented with legs and with arms, generally the arms extended. The arms, however, were the chief characteristic. A human effigy is described by Mr. S. Taylor, as situated within a mile of the Wisconsin river, near Muscoda, on section 35, in which the legs do not appear, but the arms do. It was prob-

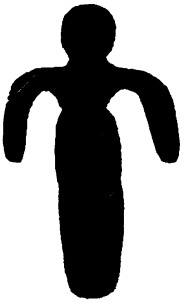


Fig. 14.

Fig. 15.

Man and Woman on the Wisconsin River.—TAYLOR.

ably designed as an effigy of a woman. (See Fig. 14) The head and breast are in this case raised by heaps of earth so as to be more prominent than the rest of the body.

In the group is the effigy of a man with its head toward the

west, and having its arms and legs extended. Its length is 125 feet, and 140 feet from the extremity of one arm to the other, each arm being about 45 feet long. The body is about 30 feet in breadth and 100 feet long, the head is 25 feet in diameter. The elevation of the whole effigy is about 6 feet.

One cannot doubt that this effigy is the figure of a man, for all the characteristics peculiar to it are clearly shown. This effigy occupies an eminence, and was the centre of a group of mounds 15 in number, which extended at intervals of about 25 feet apart for the distance of about 1,500 feet. Another human effigy is described by Mr. S. Taylor, as existing in the same locality, but representing the human figure with two heads. See Fig. 15. The measurements of this effigy are given as follows: length of body 50 feet, arms 130 feet, neck and head 15 feet, across the breast 25 feet, over the arm at shoufders 12 feet, at the end 4 feet, over the hips 20 feet, over the legs 8 feet, tapering to 5 feet, over the neck 8 feet, over the head 10 feet. Another effigy has been described by the same author, as situated near Sec. 35, T. 4, R. 1 W. It is situated in the margin of the forest, and is truly a giant, measuring from the extremity of one arm to the other 177 feet, and from the top of the head to the end of the trunk 111 feet. Its shoulders, head and breast are elevated 4 feet. About a mile to the north of this is another effigy of like magnitude, accompanied by a large group of works. Among them is a large mound, 200 feet in circumference and 5 feet in height. * Dr. Lapham has mentioned a number of effigies, which he thinks were human figures, but in several cases has mistaken birds for human effigies. One such figure may be seen at Mayville, and forms the bird effigy in the group, described in our last paper. Another human effigy is described as situated on Grand River, and is depicted in Fig. 26, it is called "The Man," and is remarkable for the unequal length of the arms. This also, is evidently the effigy of a bird. Another human figure, with gigantic arms, having a stretch of 280 feet, and a body of 54 feet in length, is described as existing near the Wisconsin River, on Sec. 35, T. 9, R. 4 E. This figure stands by itself in a valley in a pass between two high sandstone bluffs, one which rises immediately above the head. Another, also, on Sec. 9, T. 16, R. 2. This is called "a man," with legs expanded out, having no contraction for the neck. Both of these figures are, however, birds. At least the characteristics of the human effigy are lacking. There is no neck or head which has any resemblance to the human form, and the so-called arms and legs are as close imitations of wings, and the divided tail of birds. In fact, none of the figures described by Dr. Lapham are human effigies.

It is doubtful, also, whether the last figure described by Mr.

* See Squier & Davis' Contributions- Vol. I, Page 133, Plate XLIV, No. 2.

S. Taylor, was that of a man. The author has discovered effigies which might be taken for man mounds, but which were more likely intended for bird effigies. One such can be seen in the group of mounds on Lake Wingra. (See Fig. 12, No. 1, Vol. VI.) This is much more likely to have been a bird, probably a night-hawk. Human effigies have, however, been discovered by the author, and identified to a considerable degree of certainty. One such was found near Lake Monona, on land belonging to Mr. Nichols. The effigy forms one of a group, among which is a panther and a bird. The most striking specimen of the human effigy, is one which was discovered by the author, in company with Prof. F. W. Putman and Mr. J. C. Kimbal. It is situated near the public school building in the village of Baraboo. The effigy formed one of a line of mounds, which extended over the bluff where the school house now stands. The human effigy was, however, situated near the foot of the hill at the end of the line of mounds. It represented a man as lying upon his back, on the side of the hill, with feet extended toward the south; one arm drawn in toward the body and the other arm bent at the elbow and extending away from the body. The legs were not so plain, as they had been destroyed by the street grade, they ended in a garden and only one of them could be traced throughout its whole length. There is no doubt that the effigy was that of a man, the resemblance was too striking to doubt it

[TO BE CONTINUED.]

CORRESPONDENCE.

THE MOUNDS OF MARATHON.

"Ages shakes Athene's towers but spares gray Marathon."— *Byron*

In 1868, I looked down from the summit of Pentelicus at the mound on the battle-field of Marathon. It struck me as a proof of Greek shrewdness and foresight. I said to myself, "Had it been of exquisite carving it would have been either mutilated by barbarian wantonness or would have been carried into captivity, to adorn the palace of some conqueror, or to be enshrined in some museum. Had it been of metal it would have corroded, and even if of rough stone it would have been utilized in some local lime-kiln, or at least in some wall. But being simply a heap of earth it provoked no one to aggression of any kind, and so has come down intact from five hundred years, wanting ten, before the year of grace. Moreover, as it is well nigh valueless

for agricultural purposes, why should it not outlast all piles of modern masonry?"

It now seems, however, that in common with all the world was the victim of vain imaginings. Schliemann has proved the Marathon mound to be rather pre-historic than Grecian, and to date from the ninth century or earlier rather than from the fifth.

Schliemann became convinced that the common opinion about the mound was a mistake when in 1870 he picked up there an obsidian arrow-head so rudely made that it belonged to the stone age rater than to that of the Persian invaders under Darius. He also failed to discover any classic mention of rearing any mound whatever at Marathon. It is indeed said in Thucydides and in Pausanius, that at Marathon there was a tomb, or tombs of the one hundred and ninety-two Athenians who fell in the battle there, as well as columns, on which were engraved the names of the fallen. But nothing is said regarding the nature of the tombs.

Schlieman has just now tested the Marathonian mound with the spade. Its height is eleven meters and its circumference one hundred and eighty-five. In the center of the mound he dug a shaft about thirteen feet square and about forty feet deep, and he also cut into the side of the mound, even to its center, a trench as low down as the level of the plain. His finds were obsidian knives, arrow-heads and pottery, all articles of such a nature as betokened a period far back of the Persian invasion.

He was driven to the conclusion that the mound was not the Athenian Polyandrion it had been so long considered, and moreover, that it was no more than a cenotaph, for he failed to discover one single human bone.

It is to be hoped the great magician of the spade will go on with his excavations, till he shall have ascertained where the Athenian bones were really buried, as they clearly repose somewhere on the field of fame.

What tell-tales are stone tools! Obsidian in Wisconsin graves demonstrates pre-historic commerce with either Mexico or Wyoming. The testimony of these rock-wrought witnesses in Egpyt is still more curious. "Truth is the daughter of time"—and this maxim was never better illustrated than now that Greek stones cry out, bringing long-hidden truth to light.

MADISON, Wisconsin. J. D. BUTLER.

ASH HEAPS IN MOUNDS IN MONTGOMERY COUNTY, OHIO.

Editor American Antiquarian:

Among the various subjects for profound study developed in mound exploration in the Miami valley, none is so puzzling to the careful archæologist as the object which prompted to the accumulation of those vast bodies of ashes which are occasionally disclosed.

Mound Sepulture, either by inhumation or cremation presents no insuperable obstacle to its interpretation. But we are "at fault." There is nothing hitherto discovered, so far as I know, that bears the least analogy to them, unless, perchance, the Iroquois bone pits should prove an exception.*

Kitchen heaps are characterized by a heteorogeneous mass of refuse materials covered with a deposit of "made soil," the result of natural causes, and of the considerable depth. But the ash heaps we are now considering are homogeneous accumulations, sparingly interspersed with charcoal, bone dust and an occasional nodule of burned clay. Not a stone nor pebble enters into their composition except an occasional work of art. These mounds, or enclosed ash heaps, are in their undisturbed condition, invariably protected by a cover of clay several feet thick. They vary in height from five to thirteen feet, and cannot be distinguished from ordinary mounds except by exploration. As a rule they occupy elevated table lands, but rarely the highest point in the vicinity. They are so situated, however, as to command an extensive prospect.

They are found near our large water courses, and (but more frequently) in the interior at a distance of six miles from any stream of magnitude; but in all instances hitherto discovered, they occupy prominent points. With the view of conveying a clearer conception of their internal structure, I present a few examples:

FIRST EXAMPLE.

The Hoover mound is situated five miles southwest from Dayton and one mile west from the Miami river. On the west, north and south, the face of the country is level; but on the east, at the distance of a few yards from the mound, the land inclines towards the river, presenting an undulated surface which merges in deep ravines and precipitous hills.

This mound, Mr. Hoover informs me, was seven feet high and forty feet in diameter, in its undisturbed condition, but these

* NOTE—These bone accumulations are the result of a practice which was observed among the Iroquois—that, namely, of gathering the isolated and scattered remains of their deceased friends at stated periods, and depositing them in one pit, amidst universal lamentation, which was suppressed in a general feast. It is apparent, however, that this exception is based upon the assumed human origin of these ash-heaps.

Now, as the Huron-Iroquis confederacy is claimed as the aggressive force in the disruption of the Mound-builders' empire, it seems probable that the above practice, in a modified form, was borrowed from the vanquished race.

dimensions have been materially modified by persistent culture. Thus we reached the original surface at the depth of five feet, while the overlying clay had been spread out to a diameter of fifty feet, causing a reduction of two feet in its vertical height. As we found two feet of clay resting upon the ash heap, I conclude that the original depth of the production in this example was four feet.

We commenced our investigations by sinking a shaft six feet in diameter in the center of the mound. This was subsequently enlarged but failed to elicit additional light.†

The ash heap, which is three feet central depth, and twenty-five feet in diameter, is distinguished by the diffusion of charcoal, bone dust and small masses of burned clay, and by its pervious condition. We ascertained the diameter by digging at various opposite points.

SECOND EXAMPLE.

The Hines mound is situated one mile northwest from Centerville and six miles southeast from Alexandersville, on a point of land from which there is a rapid descent westward into a ravine, a gentle incline on the south and level on the east and north. Its position is about one mile west from the line which separates the water sheds of the Little and Great Miamis.

This mound is distinguished by the indurated condition of a large portion of the ash heaps, which is attributable to the presence of Springfield clay in considerable quantities. Charcoal and bonedust were present, and an occasional lump of burned clay. We found the depth of the ash-heap in this example, three feet, and the diameter twenty feet; depth of the clay protection, two feet; diameter of the mound, fifty feet. I was shown several fine leaf-form implements, which were said to have been taken from this mound. In this exploration I was efficiently aided by Mr. P. J. Pease.

THIRD EXAMPLE.

The Prugh mound is situated three miles east from Alexandersville, and two miles northwest from the Himes mound. Its position is on the northern declivity of a slight eminence from which there is a gradual descent which terminates at the distance of 100 yards in a slight depression fifty yards in width, in the center of which there is a basin sixty feet in diameter, which marks the site of an ancient circle. In the center of the basin there is a slight elevation eight feet wide. As this work is formed of clay, without any admixture of surface materials, it may safely be referred to the mound builders' epoch, and consequently contemporary with the mound.

Although there is a copious spring near these works from

† NOTE.— A trench through the mound, while it might prolong the description, would not, as I conceive, add much to the principal facts. See Fortney mound.

which it might be inferred that a concentrated population would have been attracted there, yet there is not the slightest evidence of a village site in the region except Woodbourne, one mile southeast from these monuments.

This mound is distinguished by a burned clay crust one foot thick, and about eight feet in diameter which rested upon the ash pile.

In this example there was a more than ordinary profusion of charcoal and bonedust, and strangely enough, a mass of that peculiar unctious clay noticed in my description of the Bolander-Recher enclosure. The pile, which is easily penetrated, is fifteen feet wide and two feet central depth. The clay envelope had been reduced to one foot. The diameter of the mound could not be determined, as it had been reduced almost to a common level. Assisted by W. J. Wells.

FOURTH EXAMPLE.

The Kern mound is situated one and a half miles south from Sunsbury, and three miles north from Poasttown, on the Cincinnati, Hamilton and Dayton R. R. Its position is nearly midway between Big Twin on the east, and Shawnee Run on the west. This mound is almost an exact counterpart of the last described, except that it is larger, as the original height was about seven feet, but it has been spread out over a large surface. I could not determine the extent of the burned crust, nor of the ash pile, in this example, as it required more labor than I could bestow upon it. The depth of the ash heap was three feet, and hence the the superimposed mass of clay was not less than three or yossibly four feet. On the burned crust I found a rough sandstone "gorget," three inches in length, two inches in width in the middle, and seven-eighths of an inch in thickness. The sides are concave, and the ends convex, rubbed smooth, but without perforations. It shows the effects of great heat.

S. H. BINCKLEY.

ALEXANDERSVILLE, O.

BUREAU OF ETHNOLOGY, Washington, D. C., March 24, 1884.

Editor American Antiquarian:

DEAR SIR — In answer to Dr. Riggs' letter (pp. 40-41, in Vol. VI, No. 1., Jan., '84,) allow me to say, First, that the letter was written July 30, 1879. Two years later I saw him, and explained the alphabet to him. He saw how it was possible for the medial consonants ("sonant-surds") to be used. His son, Rev. A. L. Riggs, was the first to suggest the use of the initially exploded vowe's in Ponka, etc., and he admitted the existence of some of them in Dakota. Second, I must content myself with asserting that I have not been "using an unnecessary number of marks."

A study of Ponka (including Omaha), Osage, Kansas, Iowa, Oto and Winnebago, as well as of Dakota, has proved this; and I was able to show it at the Montreal meeting of the American Assoc. Adv. Science, two years ago.

Yours truly, J. OWEN DORSEY.

EDITORIAL.

RELIC HUNTING VERSUS ARCHÆOLOGICAL SURVEY.

It is evident that the work of relic hunting must go on. The authority of government, the example of the museums, besides the zeal of about five hundred private collectors, are all given to it and nothing can withstand it. We said a few words in reference to it in October last, and have since published two letters in response, and conclude that there is no use of protesting against the custom. We, however, would respectfully ask if anything can be done toward mapping, surveying and plotting the mounds in the midst of this relic hunting. We respectfully submit the question whether the plotting of the individual mounds which the agents of a museum, a society, or a bureau are practicing while they excavate the mounds, can be considered as an archæological survey. A geological survey conducted in such a manner would not be very satisfactory. Suppose that the government surveying parties should plot the coal mines, send specimens of coal to the National Museum and call that a geological survey, would that be regarded as a satisfactory proceeding? There was a time before the rage for collecting relics had arisen, when *archæological surveys* were considered desirable. We do not know that these surveys were conducted at government expense, but we know that the very best reports on archæology were made as the results of them. The reports made by Squier and Davis, and Dr. I. A. Lapham, were the most valuable contributions ever made to archæology in the United States. They are more frequently referred to now than any other. They were made by men who cared less for the relics, but more for the monuments. The reports were published by the Smithsonian Institute and are regarded as among the most valuable contributions which that institution has ever published.

The only actual contributions to archæology in the line of monuments and earthworks worthy of the name, since they appeared,

have been published by local societies or by individuals. Col. C. C. Jones, has given descriptions of some of the monuments in Georgia. Rev. J. P. MacLain has published a little volume concerning the mounds, the most valuable part of which is the description of the earthworks of Hamilton county, Ohio. The St. Louis Academy of Science has published a valuable monograph on the archæological remains of southeastern Missouri.

A few books have been published, also, upon archæology, in general, which have contained some descriptions of earthworks, though not from first sources, viz.: Short's, North Americans of Antiquity; H. H. Bancroft's volume upon Antiquities, one of his series, and Conant's Footprints of Vanished Races. The Smithsonian Reports have also contained fragmentary accounts of earthworks furnished by voluntary writers; and the work of Mr. Joseph Jones, one of the Smithsonian contributors, has a few pages devoted to the earthworks. No appropriation has been made to the survey of the earthworks, but the chief attention has been given to the work of collecting relics and of building up great museums, without regard to the monuments as such.

That the relics have been gathered with great avidity is manifest from the report and transactions published by the various museums, societies and institutions. It appears from these that relic hunting is considered the great line of research, that the science is to be advanced by this means. The collector who hoards relics and digs into the mounds for the sake of collecting, imagines himself to be a contributor to science. The complements which are bestowed upon his associates, who are less miserly or more patriotic, convince him of this, and his conceit is increased by the fact that so many honorable names are associated with relic hunting. The Ethnological Bureau has not removed this tendency, and we do not consider that the letters which we have published in answer to our protest relieve the charge.

We hold that there are positive evils connected with this practice. One is that the practice limits the science to a very narrow range. The data of the science of archæology are not found in the relics exclusively — in fact, a very small part of the information which may be gained concerning the prehistoric races come from the study of the relics. The real life of the pre-historic people is revealed to us by the monuments. We acknowledge that the cabinets have furnished many facts and that various theories have arisen from the study of relics from the cabinets, but a broad and comprehensive view of the science will come only from the study in the field; just as much so in Archæology as in Geology. We do not expect that those who collect relics, and who are ambitious to build up great museums will appreciate this position, for this tendency to limit the study to cabinets has been so long prevalent that it is diffi-

sult to break through the limitations. We maintain, however, that there is a broader science than this relicology, which has been so prevalent.

Another evil is, that it tends to destroy the data of the science. We do not charge the wanton destruction of the monuments upon any one, but unless the rage for collecting relics is arrested, and the archæologists come to realize that the study of the monuments is as important as that of the relics, great loss is to ensue. The destruction of the earthworks is an inevitable result. Private individuals will carry out what public institutions have begun, and there is no one to prevent them.

Unless, then, the Government shall cease, through their paid agents, such as the officers and employees of the Ethnological Bureau and others, this work of gathering relics for the sake of building up the national museum, the evil will go on increasing. The first work to do is to protect the monuments; the second, to make a thorough and systematic survey of them, and then, after all due precaution has been taken, the museum may enter into the field to gather relics.

That the order has been reversed, is manifest. It needs no argument to prove this There are five museums on the Atlantic coast, eager to gather relics. There are cabinets and museums in nearly all the colleges in the Interior. The local societies and the Academy of Science are all active in collecting. We do not know of any society, or institution, or bureau, or any other party engaged in the work of surveying. We certainly do not consider the method which Prof. Cyrus Thomas has described as worthy of the name of a survey.

This method has been carried out quite enough already. With great rapidity has the agent of the bureau, Mr. Norris, passed from one part of the country to another, wherever the most relics could be secured. We hear of him in a corner of Wisconsin, digging into modern structures near the old fort. We next hear of him in North Carolina, digging out relics which the Cherokees have left — relics deposited since historic times. We next hear of him in Illinois, digging for relics; this time, however, striking upon something apparently a little more ancient.

The course pursued has led to false conclusions. There are evidences that two epochs of mound building existed in nearly all parts of the country. The agent of the bureau, Mr. Norris, who is not an ethnologist and never was, but who has been engaged for a time as a keeper of the Yellowstone Park, happened to strike into one epoch, in two or three different places. The result is that the chief of the department begins to argue a point which has been long granted, as though it were a grand discovery. We would inform the gentleman, however, that over twenty years ago, it was held that the Cherokees were the builders of the stone heaps and monuments of eastern Tennessee and the

western part of the Carolinas. The distinction between the mounds built by the modern Indians and those by the so-called mound builders is apparent in too many places to be denied and the "survey" should have seen this distinction The relics do not reveal the distinction between the successive epochs of mound erecting. The relics are very similar, whether exhumed from the mounds or picked up upon the surface. The differences between them might be recognized if the relics were separated, but ignorance as to the mounds and earthworks, has led custodians to place the relics from the same locality all together without classifying them closely. False ideas have arisen in reference to the relics themselves and very strange positions have been taken by these same custodians in reference to the earthworks. We have a case in hand.

The survey has not been extensive enough to bring the idea to the chief of the department. The inductive method would have tended to accumulate facts, and then when these facts had been gathered, to draw couclusions, but the deductive method has been followed from the outset.

The geological survey of Kentucky has published a monograph on the mounds of the Mississippi Valley, in which the author, Mr. Lucien Carr, has taken some strange positions in reference to the mound builders. This monograph is published by a "geological" survey, and should have been from first sources, the result of an archæological survey, as supplementary, but instead of this, it is made up, mainly, of quotations from books. Some of the mistakes which are made are the results of this method.

The author has drawn from the published works of Mr. H. H. Bancroft, who may be good authority on the antiquities of the Pacific Coast, but who is no authority on the mounds.

It is a strange method of proceeding, when a professed survey looks to authorities which have never surveyed, and bases his publication on the imperfect explorations which were made thirty years ago, and advances this as a new work on the mounds of the Mississippi Valley.

If there had been in this an examination of relics, some mistakes would have been avoided, but neither relics or earthworks are made the basis for the information furnished. The author plays Hamlet, with Hamlet left out. Mistakes in reference to the animal mounds, in reference to the different classes of mounds, in reference to the different epochs of mound building, in reference to the religion indicated by the mounds, and especially in reference to the skill displayed by the builders are made by the author, because of his want of acquaintance with the mounds, and because of his relying upon tradition and other authors rather than upon actual observation.

These four or five reasons for a survey of the mounds are given. Much more might be said. If the money which has been laid out already in collecting relics, and in publishing unreliable monographs, had been laid out properly, we should have had a survey already; but instead of this, authors go back to the surveys made by certain gentlemen, at their own expense, over thirty years ago, and then ring the changes on these to suit themselves. We submit, whether this is a proper, scientific course. We argue for a resurvey of the whole archæological field.

JOTTINGS.

THE average Egyptian some time ago advanced to such a stage of culture that he found it worth while to destroy ancient monuments. His destructiveness was chiefly aimed at the tombs and temples nearest the Nile. Masses disintegrated from structures overhanging the river could be tumbled down and easily rolled on board barges which would transport them where they could be burnt for lime or utilized in masonry. For checking this vandalism M. Maspero, the superintendent of antiquities, has organized a corps of thirty-three chief guardians with many subordinates with ample authority to protect and preserve antiques from barbarians who would be more ruthless than the scythe of time and the rods of tyrants. Lime burners have destroyed monuments in Palestine, in Greece and in Asia Minor. Relic hunters destroy monuments in America.

THE French commission *des Monuments Historiques* receives from the state $300,000 a year to be expended in preserving and restoring or exploring monumental remains of antiquity.

A TREASURE of twenty-five vessels of solid silver, of the Roman period, was recently dug up by a peasant at Montcornet, near Laon, in France.

NOTES ON CLASSIC ARCHÆOLOGY.

By PROF. A. C. MERRIAM.

A. H. SAYCE IN EGYPT. Professor Sayce writes from Luxor, Egypt, under date of January 7, giving an account of his visit to Abydos and its vicinity. In the two chief temples there he copied some valuable inscriptions scratched upon the walls, of which 33 are Carian, 44 Cypriote, more than 60 Phoenician, besides one or two in characters which were unknown to him. Of the Carian, only two were previously known, and they will doubtless be of great service in giving a clew to that almost unknown alphabet, if not to the language. The Greek inscriptions are mostly of the Ptolemaic epoch, and later, though a few are earlier, two or three being declared to belong to the same age as the priceless Abu-Simbel inscriptions (latter part of the seventh century B. C.), the starting point of datable Greek epigraphy. More than one dialect is represented by them, but few have chronological references. One contains the following frank admission, or rather boast: "I, Nicanor, am come with Heracleia — drunk." Professor Sayce makes no comment on the Cypriote, but they ought to yield some interesting facts. Two had previously been published from this site.

A visit was also paid to the newly-discovered temple and tomb in the vicinity, at Uladaihweh, on the east bank of the Nile. The tomb is cut in the cliff, and divided into two chambers adorned with sculptures and hieroglyphs. "On the right hand side of the second chamber is a very interesting piece of sculpture, representing two heraldic lions seated back to back and supporting the setting sun between them. The form and position of the lions are the same that meet us in the art of Babylonia and Asia Minor, and they bear a striking likeness to the well-known lions of Mykenae. The sculpture, therefore, may be regarded as a sure indication of the Asiatic influence exercised upon Egypt through the wars of the XVIIIth Dynasty. The hieroglyphs inform us that the tomb belongs to the reign of Menepthah I.; and as 'the gods of Tni' or This, are mentioned in them, it seems pretty clear that the family buried in the tomb came from the ancient city of Menes." From this and other evidence the conclusion is drawn that Girgheh on the opposite side of the river, "occupies the site of the long-lost and long-sought for city This, which was the birth place of the founder of the united monarchy of Egypt," as Mariette had already conjectured.

THE ATRIUM VESTÆ.— Siguor Lanciani announced in *The Athenaeum* of October 27th last, the important discovery of the *Atrium Vestae*, or dwelling of the Vestal Virgins at Rome. Mention is made of its previous discovery in 1497 and in 1549, but little was known of it, though enough to fix the site just at the northeastern foot of the Palatine, on the Via Sacra. Adjoining it on the north was the round temple of the goddess with its precinct. The abode itself contains halls and apartments of every size, opening on a large court, the Atrium proper, which gave name to the whole series, and in which stood a large number of statues of the *Vestales Maximae*, the abbesses of the sisterhood, erected by persons grateful for benefits conferred. Twelve pedestals of such statues were found in 1497, and two more in 1549. The excavations were pushed with vigor during November and December last, and the results are thus summarily given by Signor Lanciani, *Athenaeum*, January 19. Surface excavated, 2,400 sq. metres; maximum depth reached, 25 metres; marble pedestals with inscriptions, 13; inscriptions on marble slabs, 12; brick stamps, 102; silver coins, 835; gold coin, 1; pieces of jewelry, 2; busts and heads, 15; statues, 11; important pieces of statues, 7; pieces of columns, 11. The coins are a curious deposit, of which Lanciani gives a most satisfactory account. They were found in a rough terra-cotta jug within the N. E. corner of the Atrium, about a metre and a half above the ancient pavement, and under the remains of a mediaeval house, where they had been buried by some official of Pope Marinus II, towards the middle of the tenth century. Lanciani shows that the Pope and his officials inhabited all that slope of the Palatine at that time, and thus accounts for the presence of the hoard there. The gold coin shows the head and name of the Byzantine Emperor Theophilus (827–42), and on the other side the busts of Michael and Constantine VIII. There are 832 silver denarii, of which 828 are Anglo-Saxon, subdivided as follows, as far as identified: Aelfred Rex (871–901), 3 coins; Eadwaerd Rex (901–924), 218; Aethelstan Rex (924–940), 391; Eadmund Rex (940–946), 195; Northumbrian kings: Sitric Cvnvg N., 1; Anlaf, 6; Plegmund, Arch-

bishop of Canterbury, 4. A piece of jewelry among the coins was inscribed "Domno Marino Papa." But why such a hoard of coins from England in Rome? They are Peter's pence, which, in the middle of the tenth century, were paid solely by the Anglo-Saxons to the Pope, and out of this tribute the official residing on the site of the Atrium had received all his pay, and had bestowed it so carefully in his bank that he succeeded, unwittingly no doubt, in making the Romans of the nineteenth century his heirs. As the religious corporations of the Fratres Arvales, the Salii and the Augurs had their *fasti* or records with names and other details engraved in stone, which have been discovered from time to time more or less injured, it was hoped that something of the kind might be found in the Atrium to supply corresponding information of the Vestals; but neither there nor in any one of the 40,000 inscriptions elsewhere found at Rome, has a single line come to light which can be attributed to such *fasti*, and it is therefore concluded that the Vestals never had any. This want is compensated for in a measure by the pedestal-inscriptions found in the Atrium, all of which belong to the period of the empire. By the aid of these and a few notices from ancient authors, Lanciani fixes the names and often the dates of fourteen of the *Maximæ* or abbesses. One of these, Occia, holds the office for the period of fifty-seven years, 38 B. C. to 19 A. D. The most famous of all appears to have been Flavia Publicia, seven of whose pedestals have been found, and one quite complete portrait statue which represents a "lady of tall, queenly appearance, of noble demeanor, of a sweet and gentle, if not handsome face." Her ascertained dates are 247-257 A. D. Another pedestal is interesting from the fact that though its inscription speaks in the highest terms of the priestess, her name is erased. For this "only two reasons can be given: either she happened to forget the vows of chastity, or she was converted to christianity. The first explanation does not seem satisfactory, not only because she was most probably a mature, if not an old woman when the crime and the *memoriæ damnatio* took place, but also because the fall of a Vestal would certainly have been noticed and registered and proclaimed to the four winds by contemporary christian writers. Conversion to the Gospel seems more probably; one of these conquests of the new faith in Vesta's Atrium is actually mentioned by Prudentius, Peristeph., hymn 2." The Vestals were expelled from the Atrium in 394 A. D. and Coelia ad Concordia, the last or next to the last of the Maximae was on terms of especial friendship with Praetextatus, a famous champion of polytheism. She raised a statue in his honor in the Atrium, and received the same distinction in his house. Both pedestals have now been discovered.

THE CESNOLA COLLECTION. — The Feuardent-Cesnola suit has given to those who have had the patience to watch its tedious progress, an opportunity of gaining a fairly correct idea of the truth and falsity of the serious charges which had been urged so persistently for some years against the Cesnola Collection. The Collection has unquestionably been benefited by the light thrown upon the questions involved. Negligence and hurry in preparing some of the objects for exhibition were shown, and acknowledged by the authorities of the Museum, and several wrong identifications of site were corrected. In these particulars the value of the Collection is enhanced to the archaeologist, and the efforts of the plaintiff have not been amiss, though one might suppose that this could have been accomplished without the expenditure of so many thousands of dollars and the exhibition of so much bad feeling. But the charges of attempted fraud upon the public were too ridiculous to deserve the consideration which they received. The early assertion that many of the objects were not genuine, especially those from Golgoi, was in effect abandoned at the trial, and could not stand for an instant before the testimony of Ceccaldi and Lang, written on the spot at the time of the discovery; while the notion that not the Director merely, but the trustees of the Museum (who were cognizant of all that was done) should have been engaged in any such conspiracy passes comprehension. The charge rested mainly upon the use of a wash upon the marbles and upon the bronzes, as was alleged for the purpose of covering restorations on the one and rejuvenating the other. In reality, the milk-and-stone wash was used to preserve the marbles from the gradual disintegration which anyone can convince himself is going on there. The treatment of the bronzes was for a similar purpose, and it is to be hoped that the authorities will succeed in both these laudable endeavors. There is also a curious change progressing in the silver bowls, armlets, etc., from Curium which deserves attention. To look at these casually, one would suppose that they had been just removed from an envelope of cotton wool, numerous fibers of which had adhered to the surface of the silver and had not been removed. Instead of this, the filaments are said to be actual growths from the silver itself. The fact needs chemical investigation. As to the marbles, it may be added, that the Venus de Milo was removed last fall from ex-

hibition at the Louvre, and a cast substituted in its place, that the original might be treated for the effects of dampness and exposure.

The most serious charge against the Director was that of cutting the "Mirror," on the statuette of "Aphrodite," which, if true, would have been infamous. But the conscientious, exact, and ingenious, microscopic investigations of Mr. Braman, President of the Microscopical Society, proved beyond doubt from the deposits of lime upon the present surface of the "Mirror" and the surrounding portions, that here is the original surface, and the traces of color still visible add to the proof. The other important indictments shared a very similar fate.

A good example of a deposit similar to that which covered the "Mirror," may be found in the case of the relief, also from Golgoi, figured in Cesnola's *Cyprus*, opposite p. 150, in the upper corner to the left. The top of this slab is broken away on the right, but on the left exhibited a figure which was originally described as an eagle, or possibly a sphinx. Now, however, after having been thoroughly bathed and the deposit removed, four winged horses are disclosed, yoked side by side and apparently drawing a chariot, like several of those elsewhere in the Collection. Three of the heads are distinctly carved, even to the nose-pieces of the bridles, and traces of color still remain. The yoke extending across the necks of all is unmistakable. The furthest horse, along the back of the slab, is somewhat broken away, but enough remains to show the outline. The one nearest the spectator turns its head so as to present the face nearly full to the view; the others are looking straight to the front. This group may have some connection with the Cypriote inscription below it. The standing figure upon the spectator's right is probably a minstrel holding a lyre which he touches as he sings.

Now that such conclusions have been reached by the trial and the questions at issue set at rest, one would hope, so far as the courts are concerned, the Museum owes it to itself to make the most exhaustive search for all repairs that may have been made, and to indicate these in some unmistakable manner for the guidance of future students who desire to know the exact condition in which each object was discovered, that sound and trustworthy archaeological conclusions may be drawn. It has been intimated that this would have been done before, had it not been for the charges impending. Now it can be carried into effect with propriety and thoroughness.

ROME AND VICINITY.—Since the beginning of the year excavations have been made on the road from Rome to Marino, where a large Roman villa was known to be situated, and many objects of interest and value have been found, among them eighteen pieces of sculpture. One of these is a colossal Marsyas nine feet high in a good state of preservation, and the statue of an athlete of the Lysippean type, a beautiful bearded satyr, a winged victory, and a group of an eagle carrying off a lamb. The name of the original owner of the villa was Q. Voconius Pollio, and it afterwards passed into the hands of the family of Valerii. These names are found engraved upon the water pipes running between the fish pond and the baths and fountains.

Within the city itself, the construction of the war office led to the discovery of the town residence of Vulcatius Rufinus, the uncle of Julian the Apostate. The vestibule alone has been uncovered, and this is paved with marble of the rarest kind. On the left of the entrance a marble pedestal was found dedicated to the owner by the township of Ravdenna in a prolix and flowery inscription of the fourth century.

PAPYRI FROM THE FAYUM.—During the past few years a large number of papyri have been discovered in the Fayum in Egypt, and have found their way into European museums and libraries. The Berlin museum has a valuable store, but probably the largest nnmber is in the custody of the Austrian museum at Vienna, where they are being examined under the direction of Prof. Karabacek. Already some 1,500 have been investigated, but this is only a small part of the entire mass. The Fayum has always been celebrated as the garden of Egypt, but it has not been known in modern days to have been also a centre where the love of literature was considerable, as is proved by these papyri. Those already examined extend from about the beginning of our era into the tenth century, and are written in some seven different languages. Dr. Karl Wessely has had the good fortune to discover a parchment fragment of Thucydides, which contains in 44 lines the last section of chap. 91, and the first six sections of chap. 92 of the 8th book. From palaeographic evidence it is supposed to have been written about the close of the third century A. D., and is of great interest on this account, as the oldest MS. of Thucydides hitherto known belongs to the eleventh century. It presents some unknown variants and two valuable interlinear glosses. Some Greek fragments of the Evangelists offer a text whose

purity is not surpassed by the contemporaneous Codex Sinaiticus. Of value to palaeography is a large number of dated Greek fragments which extend from 203 to 699, and Arabic-Greek to 909 A. D. The Arabic material contains documents of the time of Harun al Raschid, private papers, and correspondence from distant places, even as far as Mecca.

EARLY CIVILIZATION IN ASIA MINOR — Mr. W. S. Ramsay's tours in Asia Minor have been fruitful in the extreme. His discoveries have convinced him that Boghaz Keui, in northern Cappadocia, was the center of a great power which extended its sway over all Asia Minor, at a very early period. From this fact only, can the oldest system of roads of Asia Minor be explained, for they all lead to Boghaz Keui, just as at present all lead to Constantinople. This road system fell into decay at the beginning of written history, but the ruins of Boghaz-Keui still attest in many ways its former greatness. Hieroglyphic inscriptions similar to those engraved in relief upon its monuments, are spread over Lydia, Phrygia, Lycaonia, and Cappadocia, and in the last district cuneiform inscriptions upon clay tablets, in an unknown tongue have also been found at Kaisarieh; seven of which are now in the British Museum. This civilization of Cappadocia was overthrown first by Assyrian and then by the Persian powers. Ramsay describes a monument situated at Ibriz, near the ancient Cybistra, close by a plentiful spring, in a district otherwise poorly supplied with water. It is cut in low relief upon a rock, and represents a deity standing fifteen feet high, and holding in his hand ears of corn and grapes. He is simply clad in the same style as the peasants of that region at the present day, while opposite to him stands a priest or king, nine feet high, praying to him with folded hands. This second figure is clothed in a mantle over a richly embroidered tunic, and the mantle is fastened over the breast by a buckle resembling several gold objects found in a Lycian grave. The pattern of the tunic bears a close similarity to the cross-ornaments of the Midas-tomb, in Phrygia, and is bordered with a row of *svastikas*, and inscriptions called Hittite by Sayce accompany the figures. Another relief is at Elflatun Bunar, westward of Iconium, and like the former is near a spring, but as no rock was at hand to receive the sculpture, a building of huge stone blocks was erected for the special purpose. Here a human figure is represented with horns upon his head, standing beside an altar. At his left appears a still larger figure of a god wearing a small hat which is peculiar to these reliefs, and on the right a goddess whose hair is arranged in a peculiar manner like that of the Sphinx of Eyuk.

The stone monuments of Phrygia, with one or two exceptions, belong to another and later style of art, which points to Mycenae, as shown by the two lions sculptured over the door of a rock tomb, in the neighborhood of Cottiaeum. Not far from this tomb is a monument resembling an obelisk, eighty feet high with a chamber in its lower part, containing on its rear wall a figure of Cybele, eight feet high, upon each side of which stands a lioness with its paws resting upon the shoulder of the goddess. Over the door is a relief of two opposite sphinxes of very ancient style. Elsewhere a lion and griffin are sculptured. One face of this structure is ornamented like the Midas-tomb, with cross and meander designs like a tapestry.

Mr. Ramsay will continue his explorations in Asia Minor this spring.

THE TUMULUS AT MARATHON. — The spade is a very innocent and harmless instrument when regarded simply as a spade, but put behind it the sagacity and means of Dr. Schliemann, and it becomes as formidable as dynamite, for exploding unsubstantial theories. The last exploit of the iconoclastic explorer is recounted by himself, in the columns of *The Academy*, writing from Athens, under date of February 12th. Since the publication of Leake's standard work on the Demes of Attica, it has been pretty generally assumed that the large tumulus on the plain of Marathon was erected after the great battle as a monument to the dead Athenians who are known to have been buried on the field. Schliemann speaks too strongly in saying that the acceptance of this idea has been "universal." Curtius does not mention it in his history, and Grote merely remarks that "Colonel Leake believes" it, but it certainly has been widely prevalent. Schliemann became skeptical, on the ground that so large a mound is not mentioned in classical authors as having been erected, because the thirteen similar tumuli he opened in the Troad were more ancient, because of the very rude arrow-heads found about the hillock (Leake supposed them to be Persian), and especially from a knife of obsidian, which he discovered there. He accordingly obtained permission from the government to apply the spade to the problem, in the presence of the ephor, Dr. Philios. The tumulus is described as thirty-six feet in height and six hundred in circumference. A shaft some thirteen

feet square, was sunk from the top vertically through the mound till it reached a point from six to twelve feet below the level of the plain, and a smaller trench was opened inwards from the east on a level with the plain. In both the result was the same; the earth consisted alternately of clay and sand, the objects of human industry of very archaic pottery, wheel-made or hand-made, for the most part thoroughly baked, but some only superficially. The bulk of the pottery resembles the Trojan in its glaze, some yellow, some lustrous black or dark brown, some with ornamentation in stripes, or circles and very rudely made flowers. "All this pottery has such an archaic appearance that it would not have surprised me at all had I found it among the most ancient pottery in the royal tombs at Mycenae. But I also found a very small fragment of a lustrous black glazed archaic vase, which removes us again from the age of the Mycenaean tombs, back to the ninth century B. C. For the rest, I found nothing which could claim a later date. But on the contrary, the large number of knives of obsidian which occur, and of which I found no trace in the royal tombs at Mycenae, seem to point to a much higher antiquity than these; and the same may be said of the very rude arrow-heads of obsidian, of which many specimens were gathered. I may further mention the fragment of a vase of Egyptian porcelain. I found no trace of human skeletons or of a funeral, neither charcoal nor ashes, and only some half-dozen very small bones, probably of animals, which lay disposed at various depths." Dr. Schliemann accordingly concludes that the mound was a mere cenotaph, most probably of the ninth century B. C., though it may have once served for the erection of trophies, as he found immediately below the surface a fragment of a well-wrought marble slab, which may have belonged to the base of some monument.

These discoveries prove that Marathon was a place of importance centuries before the battle set its crown of glory upon it, and new life is infused into the ancient legends which clustered about the region; how that Xuthus here defended Attica from the bronze-clad warriors from Chalcis, and how his son Ion became the ruler of Athens by wedding the daughter of Erechtheus; how it was the refuge of the children of Hercules from the persecutions of Eurystheus, and became the scene of the self-immolation of the noble Macaria. It was here, according to Pausanias, that the worship of Hercules was first introduced into Greece, which points to Phoenician connections, and thence on to Cadmeian Thebes; while on the other hand it formed the intermediate link between Delos and Delphi in the worship of Apollo, and here a solemn sacrifice was offered every year and the prognostics observed, before the sacred ship of the Athenians could set out on its the-oric mission for Delos. Indeed, Curtius regards Marathon as the original seat of the worship of Apollo in Attica.

Dr. Schliemann has now proceeded to Tiryns where he has resumed his former excavations.

EGYPT. M. Maspero has been engaged for the last two years in preparing an exhaustive catalogue of the Boulak Museum which will be of great value to Egyptologists. Its appearance is shortly to be expected. The descriptions are minute and will be illustrated by photographs.

Excavations in the vicinity of the Suez canal have brought to light some memorials of the subjugation of Egypt by Nebuchadnezzar. These are three terra-cotta cylinders containing cuneiform inscriptions with the name of Nebuchadnezzar, king of Babylon, son of Nabopolassar, king of Babylon. Prof. Sayce thinks that these were brought in by the Babylonian army and deposited in the conquered territory as insignia of victory, since they merely mention the erection of buildings in Babylon, and are written quite carelessly. An inscription of the same king, with much the same import, has just been discovered in Mt. Lebanon by M. Pognon.

PHOENICIANS IN SICILY. Before the same Institute, on the 25th of January, Helbig described a grave discovered some years ago near Syracuse. In plan and contents this grave was distinguished from all Greek graves of Sicily and Lower Italy, while it resembled those of Mycenae, Nauplia, Menidi, Ialysus and Camirus. The rock-hewn chamber resembled a bee-hive and was approached by a long corridor. It contained some vessels resembling the Mycenaean and Rhodian, and two vases of black ware which find their counterparts at Mycenae and Daulis. As all archaeologists ascribe a pre-Dorian origin to those Greek necropoles, it follows that the Syracusan grave cannot have belonged to the Dorian colonists of Sicily, nor to the oldest Ionian colony, as at Naxos where no find of the kind has rewarded the most eager excavation. The museum of Palermo alone contains some similar vases, and they are of unknown locality. Helbig therefore concludes that the grave belonged to the

Phoenicians, who, as is known from Thucydides, possessed factories along the whole Sicilian coast at one time, and these would naturally be placed upon easily defended tongues of land and islands near the coast. It is probable that such a station existed on the Island of Ortygia in the harbor of Syracuse. The myth of Cyanippus and Cyane naturalized here, suggests that of Cinyras and Myrrha with its Phoenician attributes, aud Diodorus saw in the cult of Cyane reminiscences of early human sacrifices. Under Dionysius the elder there existed on Ortygia, a quarter occupied by Phoenicians, who possessed especial privileges.

The Archaeological Society of Athens, in conjunction with the French School of Archaeology, has undertaken excavations at Elatea in Phocis, to explore the temple of Athena Kranaia there. Prof. Stamatakis represents the Society in the work, and M. Paris the School.

AGE OF THE DIPYLON VASES. At a meeting of the German Archaeological Institute of Rome, on the 14th of December last, Professor Helbig discussed the question of the period and art of the oldest Greek vases found at Athens, near the Dipylon Gate. He thought that they belonged to a period later than Homer, because they show war ships with long beaks, instead of the round transport vessels which alone he finds in the Homeric poems. One very ancient vase, which represents a funeral lament, shows the weeping women completely nude. This was as foreign to the elder Greek art, as it was common in that of further Asia. In the Homeric poems the finest works of art are from Phoenicia, where the older art inclined to the naturalistic, as the silver ox head and golden figures of Astarte from Mycenae, as well as bronze figures of warriors from the Syrian coast and many objects from Cyprus show, and this influenced the first efforts of the Greeks. Hence the Dipylon-vase represents the bodies after the manner of the Phoenicians, the face and legs in profile, the breast in full view, exactly like the Astarte-idol of Mycenae.

UNDER the editorship of R. P. F. Fita, S. T., the monthly *Boletin de la Real Academia de la Historia* has become a valuable repertory of archaeological discoveries. In almost every number some article is given to correct or to supplement for some particular district the volume Berlin Corpus Inscriptionum Latinarum, which treats of Spain. In the number for August 1883, the temple of Serapis in Ampurias is described, and in that of February is a reprint of a valuable essay on the worship of Isis in Valencia, showing the influence of Egyptian rites in Spain in Roman times, if not earlier. In the number for September 1883, a cemetery is described in Molina de Aragon, in which the skulls, and sometimes the whole body, were pierced with nails. This, it is conjectured, may have been a mediaeval burying place for Jews, and this fact an explanation of an obscure Aragonese proverb, "Clavado te veas como Judio." Another valuable memorial of the presence of Jews in Spain are lists of the taxes paid by each town or village in Alava in the XIth and XIVth centuries. It is singular to remark how little the Basque toponymy has altered since. An inedited description of the Jesuit Missions to the Guaranis Indians is printed at intervals in this *Boletin*. The childish nature of their government as here depicted, is almost incredible, and quite accounts for the subsequent miserable history of Paraguay. Attention has lately been directed to the cinnabar (red) paintings and inscriptions in Spanish caves; but nothing has been determined about them; the smooth and polished surface of the rock on which some are written militates against an extreme antiquity. In cutting a road from St. Jean Pied de Port to Roncesvalles, last year, skeletons with armlets and ankle rings of beaten copper, and with flattened skulls, were found with some other remains near Ibaneta. Unfortunately it was impossible to preserve the skulls, and the coins found were secreted by the workmen. The locality is rich in remains of antiquity; but the Prior and Canons of Roncesvalles discourage all excavations.

In the *Revue de Linguistique*, 15 October, 1883, is a paper of "Recherches sur les noms de nombres cardinaux dans la famille maya-quiche," by the Count H. de Charency. The same number contains a paper on Pre-Aryan Europe, by D. Heinrich Winckler.

WENTWORTH WEBSTER.

NOTES FROM ORIENTAL PERIODICALS.

By PROF. JOHN AVERY.

Year by year we are gathering information concerning the beliefs and customs of those tribes of the human race that have not come so closely into contact with civilization as to have given up their primitive simplicity. Moreover, the tales of early travelers, which were often untrustworthy, are being replaced by the accounts of observers long resident among the people, and whose investigations are conducted according to scientific methods. We find two papers of this character in the *Journal of the Anthropological Institute*, for November, 1883. The first is by Mr. Frederick Bonney, who spent fifteen years among the aborigines of the river Darling, in New South Wales. Mr. Bonney was one of the earliest English settlers in that part of Australia, and having occasion to employ the natives constantly as assistants in cattle grazing he had an excellent opportunity to secure their confidence and learn their habits. We condense from his paper the description of the mode of initiating a youth into manhood. When a male arrives at the age of about sixteen years he is carried off to the forest, with, or more often without, his own consent, by the young men of the village. Here he undergoes a process of "treatment" lasting from ten days to a month. The ceremony begins with the removal of a front tooth in the upper jaw by a blow from a throwing-stick. The head is covered with pieces of opossum or kangaroo skin, and a string of opossum fur is wrapped around the body, which, as well as the face, is smeared with charcoal powder. A few young men remain for company, and beguile the time and warn off intruders by playing on a rude wooden musical instrument. For the first two days no food is allowed the youth but blood from the arms of his friends. This is caught in a wooden bowl, and the novice, kneeling down with his hands behind his back, laps it up like a dog. After a time some old men approach, and, being treated with abusive epithets, engage in a mock fight with the attendant youths. They are driven off, but return and all join in a friendly dance. The noviciate ends with the smoking ceremony, to witness which the community turns out *en masse*. The youth, with one of his companions, stands or sits on a heap of green fuchsia boughs, laid over some dry grass or sticks. The youths are loosely wrapped in rugs, which cover the whole person but the head. When the fuel is ignited a dense cloud of smoke envelops and blackens the parts beneath the rugs. When these are sufficiently "cured" the rugs are raised so as to subject the face to the same process. Afterwards the hair of the head is cut short, and that of the face is carefully pulled out. The whole body is then smeared with a mixture of red ochre and emu fat, and the youth becomes a man. He receives presents from his friends, and is allowed to choose a wife, who is usually the one to whom he was betrothed in childhood by his parents.

The second paper to which we refer is by Mr. A. W. Howitt, on the beliefs of some aboriginal tribes of southeastern Australia. It is a common idea with these tribes that the earth is a flat surface surmounted by a solid vault. Beyond this vault is the land of spirits or the "gum-tree country," as they call it, a region having much the same character as the earth. The firmament is supported by wooden props, which have to be renewed from time to time, else they will rot and let the "sky fall" in a real sense. A man living at the further end of the earth has the matter in charge. Every person is supposed to have a soul, which can leave the body and roam at will, even to the border of ghostland. It can communicate with other spirits, living or dead, of which ability the experiences of dreams are a convincing proof. An ordinary spirit cannot before death visit the "gum-tree country," but a wizard can ascend beyond the sky and hold converse even with the Supreme Spirit himself. When a person dies his soul hastens westward until it falls off the earth into the region of the setting sun, whence it climbs up the sky to ghostland. The wizard sometimes succeeds in overtaking the fleeing spirit and forcing it to return while the body is still breathing. The souls of the departed are not confined to the upper world, but may revisit their former haunts, where they are regarded with more or less apprehension. We have hinted that these tribes believe in a Great Spirit. He is supposed to have formerly lived on the earth, and to have taught the tribes all the arts and ceremonies with which they are now conversant. He ascended to heaven in a violent tempest, where he sits observant of the deeds of men below. Any infraction of his ordinances is punished by sickness or death.

Central and northeastern Asia, with their shifting populations, is a region whence have sprung some of the most important race-movements of history, yet exacti-

formation regarding both the land and the people has hitherto been hard to procure. Within a few years much has been done to clear up this obscurity, for which service we are largely indebted to the indefatigable labors of Mr. H. H. Howarth. The latest contribution from his pen is the sixth of a series of papers on "The Northern Frontiers of China," which we find in the Journal of the Royal Asiatic Society for October. Mr. Howarth's plan is to construct a history of the different races that have occupied central Asia since the earliest times. To lay out in proper order the almost hopelessly tangled annals of these restless and numerously subdivided populations is a difficult task, and the success of the work depends much upon the manner in which it is undertaken.

The writer proposes to begin with the latest movements of race, and thence to feel his way back to more primitive times. The narrative commences, then, with the conquest of China by Manchus in the 17th century. These are traced back to the Kin or Golden Tartars of the 12th century, who at the time of the Mongol conquest under Chinghis Khan, occupied the six northern provinces of China. The descent of this people from the Moho, the ancient inhabitants of Manchuria, and their history from the time they achieved their independence of the Khitans, is next described. The empire of the Kara Khitai, which arose in the 12th century, and included most of the Turkish tribes north of the Jaxartes, forms the subject of another article.

The paper before us is devoted to the history of the Kingdom of Tangut, or Hia, as it was called by the Chinese, from its rise in the 10th century to its overthrow by the Mongols in the 12th.

The same number contains several other papers, of which we will make brief mention of two. Mr. Edward Thomas writes of the Rivers of the Vedas and how the Aryans entered India. It is generally agreed that the ancestors of the Hindus came into India from the northwest; and, since there are only a few gates in the mountain wall encircling that part of the land, it is worth while to inquire whether the earliest records of this people give us any information regarding the particular avenues through which the immigrants came. We find in the Rig-Veda numerous allusions to the rivers with which the first settlers were familiar; most of these, being easily identified, afford evidence of the region occupied. Of the streams mentioned, the Saraswati and the western affluents of the Indus bound eastward and westward the land known to the Vedic poets. The latter streams flow through the Khyber, Kurrum, and Gomal passes, which at the present day are the chief routes of commerce between India and the countries west of the Indus.

From these and other indications the writer infers that the Aryans descended from the Oxus valley by the passes in the vicinity of Herat, and thence, pressed onward by the Iranians, slowly made their way, through the passes named, into India. A curious reminiscence of their earlier home is found in the Sapta Sindhu or Seven Rivers, a title by which the Panjab was known, though only five streams are of sufficient importance to deserve distinction. This is explained as an effort on their part to preserve a local designation familiar to them when living on the head-waters of the Oxus.

Mr. Arthur Lillie writes on the Buddhism of Ceylon, and seeks to controvert certain views of Buddha's teachings which have been generally accepted by scholars, and particularly set forth in the writings of Dr. Rhys Davids. These are that the sage taught atheism and the annihilation of the soul at death. The first charge he rebuts by citing passages from a collection of Sutras, dating, according to Dr. Davids, from the fourth century B. C., in which Buddha describes to certain Brahman inquirers the true way to become united with Brahma. As to the second charge, founded upon Buddha's reputed declaration that there is neither conscious nor unconscious existence after death, nor any state intermediate between the two, Mr. Lillie points out that in the same Sutra the master declares those Brahmans to be in error who teach the annihilation of the soul. The explanation of these contradictory statements is, in the writer's view, that they were never uttered by Buddha, but were the inventions of a later, dialectic age, when it was the fashion to dispute every position taken by the Brahmans. Mr. Davids' representation of the doctrine of *Nirvana*, which is, that at death the individual is annihilated, but his deeds survive to become the inheritance of some new individual, is also pronounced incorrect, and passages are cited in proof. These conflicting views of the teachings of Buddha, for each of which proof texts may be quoted, show that his religion has passed through stages of growth, and that it is not an easy task to so sift its surviving records as to authoritatively decide which doctrines are primitive and which have been grafted in from a foreign stock. When all the materials, now in process of translation, are before us we may be in a better condition to settle contested points.

The same journal for January, 1884, contains two other papers of interest to students of India. The first is by William Simpson, on Pujahs in the Sutlej Valley. The writer spent several weeks of the summer of 1860 in the village of Chini, among the Himalayas, about two hundred miles east of Simla, where he had a good opportunity to witness the religious ceremonies of the simple country folk. Each hamlet has a little temple, which is the best structure of the place, and in which is a representation of some divinity — usually the bloody goddess Kali. There appears to be no priesthood in this region, but the rites of worship are performed directly by the villagers. These consist chiefly of bathing with water the face — *i. e.*, the mask representing it — of the Devi every morning; the sacrificing of kids, whose blood is dashed upon the walls of the temple, and whose flesh is afterwards consumed by the worshippers; and the procession when the goddess is taken out for an airing or to pay visits to some neighboring shrine. The interesting feature of these ceremonies is their seemingly antiquated character. The last, in which the Devi is carried on a sort of litter upon the shoulders of men, appears to represent the car festival, modified by the nature of the country, which was once celebrated quite generally in India, but is now associated chiefly with the service of Jagganath, at Puri. We learn from the Chinese pilgrim Fah-Hian that in his time the custom was observed not only in India, but by Buddhists beyond the Himalayas. It would not be surprising if a better acquaintance with the more secluded villages of these mountains should reveal a good many usages which were introduced ages ago from India, and have been preserved from decay by that very seclusion. In connection with the car-festival was a mock fight with walnuts and pine cones, of which the writer, being ignorant of the language, could discover no explanation.

The second paper by Mr. Robert Sewell, reports the important discovery of three very ancient temples in southern India. They are found at Conjeveram, a modern corruption of Kanchipura, the ancient capital of the Pallava dynasty, which reigned for an uncertain, but long, period to the 11th century, when it was overthrown by a neighboring power. The Pallava kings were noted in early times for the magnificent sculptures and temples produced in their reigns. The style of architecture of the temples hitherto known in southern India is pretty uniform, and dates from about the 11th century. The pattern of the temples just discovered is of an entirely different and more ancient style, reminding one of the old cave temples, of which there are some remarkable examples near by at Mahavallipur. This striking resemblance between the two sorts of buildings, raises the question whether they may not be nearly or quite contemporaneous. If this be true, we have found some temples older by several centuries than any hitherto known in India.

LINGUISTIC NOTES.

By A. S. GATSCHET.

ABORIGINAL LITERATURE. Innumerable books on Indian history, habits and customs, present condition, etc., have been composed by whites, but how many by the Indians themselves? An answer to this query is given by a new publication of the indefatigable worker on the aboriginal field, Dr. D. G. Brinton, entitled, *Aboriginal American Authors and their productions; especially those in the native languages. A Chapter in the History of Literature.* Philadelphia, 1883, 8vo., 63 pages. Since the Indians were originally unacquainted with the art of writing and composition, the white race has a large part in the productions enumerated by the author, and many of these books were written by mixed-bloods. Nevertheless, the original literary productions are very creditable to the ingenuity of the Indian, especially to his oratory powers. Mexico and Peru have furnished the largest number of aboriginal authors. Father Motolinia, one of the earliest missionaries to Mexico, testified to the readiness with which the natives acquired both Spanish and Latin, and adds that, in the latter tongue, they became skilled grammarians, and wrote both verse and prose with commendable accuracy (oraciones largas y bien autorizadas, y versos exametros y pentametros). Among the better known names are those of Don Fernando de Alva Ixtlilxochitl, Fernando de Alvarado Tezozomoc, Juan Bautista de Tomar, Don Antonio Pimentel, Diego Munoz Camargo, Don Pedro Ponce and San Anton Munon Chimalpain.

ALE-UTIAN. In 1846 the Russian priest Ivan Veniaminoff published a sketch of the Ale-utian language, which, even at present, is almost the only manual accessible for the study of this northern language. Although the author was not a philosophically trained linguist, his statements are given with precision and accuracy. His results were presented in the language of actual science by Prof. V. Henry, professor at Lille, France, in two numbers of the "*Revue de Linguistique*," of Paris (1878–1879), who had previously published his studies on the Innok or Eskimo in the same periodical (1877). The verb is exceedingly rich in tenses, voices and moods, and the language is interesting in almost every other respect as well.

CREEK LITERATURE. Among the recent publications in Indian languages is a translation of the two epistles of Paul to the Corinthians, made by Mrs. A. E. W. Robertson, for many years a teacher at the Tallahassee Indian school, into the Creek or Maskoki language. It is published by the American Bible Society in New York, 1883; 16mo., 67 pages, under the title: *Coku enhvtecesky svhokkolat tepakat vpastel Pal Kvlenrvlke ohtotvte.* Before this, the gifted author has translated, with the aid of natives, many other portions of the Bible into the same language.

MAYA DIALECTS. Of the numerous dialects of the Maya family of dialects but few have been investigated thoroughly. The best known are: (1.) The Maya proper, spoken in the peninsula of Yucatan. (2.) The Kiche; and (3.) The Kachiquel. Those who have labored the most for acquainting scientists with the Maya dialects were Dr. H. C. Berendt, Squier and Don Pio Perez, in this century, and the Spanish missionaries in former centuries. During a five years' stay in Guatemala, Mr. Otto Stoll, a physician of Zurich, Switzerland, has made extensive studies of several Maya dialects, especially those of western Guatemala, and has just published his results in an octavo pamphlet: "Zur Ethnographie der Republic Guatemala." Zurich, 1884. (Druck von Orell, Fussli & Co.) 180 pages and linguistic map. In his division of the Maya stock into dialects he differs somewhat from Dr. Berendt, and gives his reasons for doing so. In a comparative vocabulary he presents over 600 words in seventeen Maya dialects. Maya languages are spoken in the largest portion of that southern republic. The languages spoken there which are not Maya, belong either to the Aztec or Caribe stock, and besides there is Sinca and Populuca, the latter belonging to the Mije family.

COSTA RICAN LANGUAGES. We have received the first 52 pages of a very important publication on the above subject, entitled: Apuntes lexicografiicos de las lenguas y dialectos de los Indios de Costa Rica, por Bernardo Augusto Thiel (bishop at San Jose de Costa Rica). 8vo. 1882. Imprenta Nacional, San Jose. The portion before us is arranged with the Spanish terms standing first and reaches down to the letter P. It embraces the dialects of the Talamancas, Bribri, Cabecar, Estrella, Chiripo, Tucurrique and Orosi, Terraba and Boruca, Guatuso. The number of words contained in these 52 pages amounts to about 2,500 and the sequel is soon expected.

CHILIDUGU. Bernard Havestadt, a Jesuit Missionary of high attainments, published in 1775 a manual on the language of Chili, a country which had been the field of his spiritual labors for many years. This publication, long since out of print, contained a Chilian grammar, two vocabularies, catechism with translation, musical notes giving the melodies to his Chilian hymns, and a full diary of the author's trips through the country, with appended map; was written in good ecclesiastic Latin, and bore the title: *Chilidugu Sive Tractatus Linguae Chilensis.* As Heckewelder once extolled the Delaware, so does Havestadt praise in wordy encomiums his favorite Chilidugu (dugu means *language*) in the following unmistakable terms: "Although this language is spoken by barbarians, it is by no means barbarous in itself; and as much as the Andes exceed other mountains in height, so much does Chilian excel other tongues. Whosoever knows Chilian, will despise all other languages as being far below it, as being full of superfluities and other defects (Preface)." The phonetic system possesses, according to Havestadt, forty articulations, and is of easy and harmonious utterance. The inflection seems to be of remarkable simplicity and phonetic regularity; the verb has five tenses, an affirmative and a negative form, a passive voice and a dual exists in the verb, pronoun and noun. In the noun the author has discovered the six cases of Latin, but on examining his paradigm, we find that accusative does not differ from his nominative case. The verb possesses a compound objective conjugation, commonly called "transiciones." In phonetics, the similarity of Chilidugu with the Peruvian dialects of Quichhua and Aimara is striking. Dr. Julius Platzmann has recently reproduced the two volumes, which are highly import-

ant for the study of American linguistics, in a splendid fac-simile edition, printed and published by B. G. Teubner, Leipzig, and ethnographers as well as geographers will find it a special treat to study the quaint old map of the Padre, reproduced by photo-type, and appended to the circumstantial diary of his voyages along and within the high-towering range of the Andes.

HINDUSTANI GRAMMAR.—Among the noteworthy papers contained in the *Revue de Linguistique* (Paris, Maisonneurve & Co.) of 1883, is an elementary treatise on the Hindustani language, which is spoken throughout the wide plains extending from the Himalaya ridge to the Vindhya mountains, and from Bengal to Sindh and the Panjab. This language is derived from Sanscrit, is spoken by sixty millions of people, and subdivides itself in two main branches, the Occidental and the Oriental Hindustani (or Hindi, widu), which again form numerous sub-dialects. One of the editors of the *Revue*, Professor Julien Vinson, has composed a grammatical sketch of it (*Revue de L.*) page 250–324), mainly phonetic and morphological, by availing himself of the existing grammars of Garcin de Tassy (1829), Dr. R. Hoernle (1880), Rev. Kellogg (1876), and prefacing it with a useful apercu of the three principal linguistic families of India, and their numerous dialects. Instead of presenting a dry account of linguistic facts piled upon each other, Vinson has illustrated the language through the principles of linguistic science, pointing at the origin of forms and their historic development, so that even readers, who feel little interest in Asiatic languages, can form an accurate idea of the general principles upon which Hindustani and the modern languages of northern India are built up. Other articles of the *Revue* enlarge upon Basque grammar, etymology and literature; upon two prefixes in French; upon the Gascon-French vernacular; upon a Creole dialect, and a palatal sound in Sanscrit.

PANJABI LITERATURE.—Captain R. C. Temple, Bengal Staff Corps, and Cantonment Magistrate at Ambula in the Panjab, India, is composing a treatise on the origin and meaning of the Hindu and Mohammedan proper names of persons, many of which are of a rather drastic character, and have often been noticed as "opprobrious names" in learned journals. The book will appear under the title: *"A dissertation on the proper names of Panjabis."* Another publication, perhaps of more general interest to the linguists, are the *"Legends of the Panjab,"* published by the same author, in monthly numbers, from August, 1883. These are the stories and legends preserved in the memories of the wandering bards of that section, given in the original text, with translation and notes. Many of them are of high antiquity, referring to the history of the Aryan and non-Aryan population of northern India; others appear, in other forms, in the old Sanscrit literature. Both publications can be ordered through Messrs. Trubner & Co., Ludgate Hill, London.

KEANE ON THE BOTOCUDOS. The Botocudo Indians, also called Aimores, Nkrakmun, are now mainly confined between Rio Pardo and Rio Doce of the eastern coast of Brazil (15 deg. 20 min. S. Lat.) but formerly roamed also over the province of Espiritu Santo and reached inland to the headwaters of the Rio Grande (Belmonte). In the Journal of the Anthropological Institute, London, November, 1883, A. E. Keane has published an anthropological and ethnographical sketch on this people (15 pages) chiefly following the earlier authors and adding a chapter on Craniometry from recent sources. A short notice on the Botocudo language proves the existence of many dialects and gives some interesting specimens of the formation of compound nouns.

RECENT DISCOVERIES.

The Museum of the Archaeological Society of Athens has recently acquired a pair of stone *halteres* discovered at Corinth. These were weights held in the hand to assist in the long jump. They are known to have been of various shapes, from their representations in vase-paintings and elsewhere; but these resemble huge almond stones, about eight inches long. On one side a hole is sunk large enough to contain the four fingers of the hand, and in the other a smaller one for the thumb, communicating with the depression for the fingers. The weight of each is given as 2,018 grammes; but one was found in the excavations at Olympia of more than twice that weight. Pausanias (V. 26, 3.), describes something very similar in the hands of a

statue at Olympia, consecrated by Micythus, the slave and successor of Anaxilaus of Rhegium, (Hdt. vii, 170), in the first half of the fifth century B. C. From the vase-paintings the attitude of the leaper is shown to have been this: He stretched out his hands in front of him, one of the *halteres* in each, then bent his knees, and then at the same moment straightened his legs and brought his arms backwards. The number of feet covered by these leaps is somethimg incredible, though attested by many writers of antiquity. According to these 50 feet was not uncommon, while Chionis passed 52, and Phayllus of Croton, 55 feet. This was a standing leap; but our athletes scarcely reach half that distance with all the advantages of a run to give them impetus.

EXCAVATIONS IN TUNIS.—The archaeologists, Reinach and Babelon, whose departure from France to Tunis, has already been announced, have been making investigations in the lands of Meninx in the southwest extremity of the Lesser Syrtis, and upon the adjacent mainland. On the island several life-size statues of red and violet marble, together with mosaics and interesting architectonic ornaments have been discovered and photographed, but the expectations of inscriptions have not been realized. On the opposite coast the greater part of a forum has been excavated where about twenty inscriptions, three life-size statues and a beautiful head have rewarded their labors.

A LEAD STATUETTE.—A remarkable statuette of lead, representing a Mercury with winged feet, has been dug up at Marzabotta in the Romagna. Prof. Brizio describes it as a pretty exact replica in miniature of the Doryphorus of Polyclitus. Statuettes of lead are exceedingly rare. Not a piece of this kind is to be found in the collections of Naples, Rome, or Florence. Bologna has two, but of coarse workmanship, while the Mercury of Marzabotta is of a high order of technical execution. It is thought to have served as a model for bronze casting.

DISCOVERY OF A NEW PICTURE BY DURER.—At a recent London auction a Theocritus of the *editio princeps* was knocked down at £15. It was described in the catalogue as having on the first page "a cleverly drawn landscape in colors." But this picture turns out to give the book ten-fold value, for it is the handiwork of Albert Durer. It is inscribed, as the buyer was first to notice, with the words: "*Albertus Durerus, Noricus, fecit in honorem Bilibaldi Pirkeymerii, amici sui optimi, 1524.*"

J. D. B.

W. M. F. Petrie has been engaged by the President and Committee of the Egypt Exploration Fund to superintend the excavations this year in the Delta. Work has been begun at Zoan or Tanis.

ETHNOLOGICAL NOTES.

THE MUNSEES. This name was found on the early maps, near the headwaters of the Ohio River. It is that of a tribe that has been associated with the Delawares. This tribe was removed from New York to Indiana, and from Indiana to Green Bay, and from Green Bay to the west of the Mississippi. They began to decline from the year 1848, as the Delawares were unwilling that they should reside on their land, but they afterwaad dwelt upon the lands of the Wyandots. They secured a tract of four sections from the Delawares, but sold it in 1857, and were confederated with the Chippewas in 1860, but are hardly recognizable at the present time as a separate tribe.

SAMSON OCCUM, was an Indian converted in a boy's school, kept by Rev. Eleazar Wheelock, in Lebanon, Connecticut. He became an effective preacher. Dr. Wheelock became the founder of Dartmouth college. Occum was a success. He went to England, and created a sensation. He preached so effectually that George the Third, subscribed £200, and the Earl of Dartmouth £50. About £10,000 pounds was raised in all.

IN the proceedings of the New Jersey Historical society, for 1883, there is a sketch of the migrations of a band of the Delawares, which has some interest. This band migrated from New Jersey to New York, in 1802, from there to the Fox River, near Green Bay, in Wisconsin, in 1824, and from this section to the Delaware lands, on the Missouri River, near Ft. Leavenworth, in 1840.

THE GAYHEAD INDIANS.—The wreck of the City of Columbus, has called attention to the Gayhead Indians. There were originally thirteen tribes of Indians in Massachusetts, viz.: Chappeguiddick, Gay Head, Mashpee, Herring Pond, Natick, Punkapog, Troy, Grafton, Dudley, Yarmouth, Dartmouth, Tumpum and Deep Bot- tribes.

BOOK REVIEWS.

The Edwards Papers; being a portion of the letters, papers and manuscripts of NINIAN EDWARDS. Presented to the Chicago Historical Society, Oct. 16, 1883, by his son, Ninian Wirt Edwards, Ex-Attorney General of the state of Illinois. Edited by E. B. Washburne; Chicago, Fergus Printing Co., 1884.

The early history of Illinois forms a very interesting part of American history, for it embraces nearly all of the Interior, and is closely connected with the course of events which have occurred throughout the continent.

Governor Edwards was governor of the territory before it became a state. The letters which were written to him, and which have been published in a superb form, bring up the incidents of the territorial times, and so illuminate a page which has been, heretofore, quite obscure.

A scenic procession passes before us. Personal biography, political history, social life, local events, are all reviewed, making the times very vivid. The period dwelt upon is that which elapsed from 1811 to 1833. During this period nearly all the extensive exploration trips into the far west such as Lewis, and Clark's, and Long's, were taken. During this period the great region, which was originally embraced in the province of the Northwest Territory was first divided into counties and then into states, the counties, being, in some cases, as large as states. During this same period, the settlement and admission of several states occurred, such as Indiana, Illinois, Michigan, Wisconsin, Iowa, Minnesota, and Missouri. During this period occurred the removal of many of the Indian tribes from their original possessions to reservations west of the Missouri river, viz.: the Miamis, of Indiana; the Kickapoos and Pottawottamies, of Michigan; the Illinois, of Illinois; the Sauks, and Foxes and Winnebagos, of Wisconsin. There were two wars during the time, the war of 1812, and the Blackhawk war. No period was more important or had so much influence over the destiny of the Interior as this. The transition between the Revolutionary war and the war of 1812, resulted in the removal of Indian tribes from Ohio, and the settlement of that state, but the transition from the war of 1812, to the Mexican war of 1849, including the Black Hawk war, resulted in the occupation of seven other states. The letters which are published may be regarded as original documents. It is fortunate that they are rescued from all calamity and mishaps, by being published. Many documents like these have been destroyed by fire or lost through carelessness.

The Chicago Historical Society has done a good work in collecting them, the arranging and compiling has been well done, and the notes by Mr. Washburne illuminate the events and are very valuable. The expense of the publication has been generously met by one of Chicago's merchant princes, Marshall Field. The mechanical execution has been done by the Fergus Printing Co. All, together, they have produced a splendid volume, and one which reflects honor upon the society and the gentlemen who have so faithfully and generously put their hands to the work of preparing and publishing.

Biographical Sketch of Enoch Long, an Illinois Pioneer, by HARVEY REID. Chicago, Fergus Printing Co., 1884.

The second volume of the Chicago Historical Society's collections is a thin octavo printed in the same style and type with the third. Mr. Enoch Long was a brother of the Major, George W. Long, the celebrated explorer. There was nothing remarkable about his life, and the sketch fails to bring out anything of the history of the times in which he lived. Opportunities for this were numerous, as the period covered by his life was an important one. The lead mines of Wisconsin, the slavery excitement at Alton, and the railroad and steamboat history of Illinois, all might have been properly dwelt upon at some length and the facts connected with them brought out, for Mr. Long was in the midst of all these scenes.

A biographer who has breadth of thought and extensive reading enough to have treated on these topics, would certainly have made the sketch more useful to the public. If a private life of a good man is worthy of being made the subject of a single volume of the historical collections, the theme is well chosen, but this we hardly consider the province of history.

The treatment of the subject, should, at least, have been broader.

History of the Minnesota Valley, by Rev. EDWARD D. NEIL, and *History of the Sioux Massacre*, by CHAS. S. BYRANT. Minneapolis North Star Publishing Co., 1882.

Turning now from this region, we find a valuable history of the Minnesota Valley, prepared by Rev. Edward G. Neil, and published by the North Star Publishing Co. A superb quarto, containing 1,016 pages. Dr. Neil begins with the early explorers such as Nicolet, Groselliers, Menard, Jolliet and Perrot, La Salle, and Duluth, Hennepin, La Hontan, Le Seuer, D'Iberville, who visited this regiou between the years 1635 and 1763. He then gives descriptions of the explorations by Jonathan Carver, Lieut. Z. M. Pike, Major S. H. Long, and Thomas Douglass, the Earl of Selkirk, covering the period between 1763 and 1836. Occurrences in the vicinity of Fort Snelling and description of the Indian tribes and missions of Minnesota follows this (1836 to 1849). Minnesota, from its organization as a territory to its admission as a state from (1849 to 1858) comes next. The pioneer history of the different counties of the Minnesota valley follows the general history, and occupies the largest part of the volume, filling nearly 900 pages.

It is fortunate that Minnesota has so able an historian as Edward D. Neil and that the publishers of local history in the state have been able to secure his services. Local histories elsewhere have been published in such an exaspesating manner as to be a source of disgust, and in fact so as to make the books a travesty on history. The work here, however, has been honestly and faithfully done, and shows that a commendable state of pride and an honest disposition to give an equivalent for the money received have ruled the publication of this volume. Everything about the book indicates this. The volume is one of the most valuable of all the state and county histories which we have seen, and we take pleasure in commending it in all respects.

Oregon, the Struggle for Possession, by WILLIAM BARROWS. Boston: Houghton, Mifflin & Co. The Riverside Press. Cambridge, Mass., 1884.

The history of Oregon next engages our attention. In 1697, Spain claimed as her share of North American on the basis of discovery by De Soto, all the region between the Atlantic and Pacific, which was situated south of the latitude of Charleston, Carolina, embracing also the region from the heads of the Arkansas, and extending to the mouth of the Columbia. This embraced the region now called Oregon as well as Washington Territory. France was only second to Spain in the extent of her claims. Her territory reached from the Hudson Bay to the Red River at the north and down the rivers to the mouth of the Ohio, including the Alleghanies and the St. Lawrence. England was shut into a small part of the Atlantic coast. England, however, succeeded in getting possession of nearly the whole territory.

This was the map, which was founded upon the discoveries; one hundred years later the case is entirely different. Spain has withdrawn her claims to the northwest coast, and has fixed her boundary on the north line of California. France, also, has yielded up her claims. In 1763 she surrendered her possessions east of the Mississippi to England, and her possessions west of the Mississippi to Spain. England claims the moiety of the territory. Another change takes place, Napoleon recovers from Spain the western half of ancient Louisiana, including Oregon, and in 1812 disposes of these claims to the United States.

The territory was brought very late into the possession of the United States. There was a long struggle over it, even after the purchase; as England claimed this part of the northwest coast. The Hudson's Bay Company were the first occupants of the region, and their policy was to keep all this new territory, including what is now embraced in the bounds of Idaho, Montana, Washington Territory and Oregon, in a wild state, where trapping and hunting might be continued. The boundary line of the British possessions was not established, and this company claimed the whole region as belonging to England. It is worthy of remark that two missionaries and their wives, Rev. Dr. Whitman and H. H. Spaulding, were the means of rescuing the region from the grasp of this company, and by the occupation of Oregon, saved it all to the Union. The personal incidents and exploits of Dr. Whitman in his efforts to rescue the territory, are here narrated. It is a chapter in American history which has never been given in so compact a form. The author is well fitted to accomplish the task, as he was well acquainted with Dr. Whitman and familiar with the incidents.

There is, to be sure, considerable repetition in the matter, and a lack of critical and close editing of the contents, but the familiarity of the author with the persons

and incidents, and his admiration of these pioneer missionaries has thrown a charm over the volume which atones for all deficiencies.

His enthusiasm over the event is great, although he is inclined to ring out the changes, and to make the most of the incident, even at the risk of repetition.

Our readers will find the description of the early migrations to Oregon and the resistance of the Hudson's Bay Company to the settlement, worthy of attention, for it brings out a chapter of American history, concerning which very liitle is known.

The northwest coast, including the territories of Idaho, Montana and Washington, as well as Oregon, may be said to have been saved by the Missionaries.

Among the Alaskians; by JULIA MCNAIR WRIGHT, Philadelphia. Presbyterian Board of Publication, 1334 Chestnut Street, 1783.

The book is a very interesting one and well worthy of perusal, as it gives the early history of that region to which so much attention has been given.

The Alaska purchase is proving to be a wise and profitable one. Other histories of Alaska have proved this — the one by Rev. Dr. Sheldon Jackson, among them. For interest in description, and for richness in information, the last, by Mrs. Julia McNair Wright, is perhaps the best. The Presbyterian Board of Publication, has given the book much attractiveness, both in the style and binding, in the printing, and in the illustrations. The authoress's style is well known and is of itself a sufficient commendation.

World Life or Comparative Geology, by ALEXANDER WINCHELL, LL. D. Second edition. S. C. Griggs & Co., Chicago. 1883. 642 pages.

"The materialization of astronomy." Such is the phrase, which properly expresses the subject to which Prof. Winchell has addressed himself. The title, "World Life," does not quite express it, for this life is immaterial. The title "Comparative Geology," is still farther from the mark, for this refers only to the material of this world; but the term which we have used expresses both thoughts, and depicts the cosmic life, as affecting world stuff.

There are laws of astronomy which are made known by this materialization. The laws of geology, or rather of geogony, are affected by it also. But the materialization is a department by itself. Cosmic dust is the term which Prof. Winchell uses; this is also an expressive phrase. Facts have been rapidly accumulating concerning this world stuff, and a book was needed, which should gather these facts into a compact form, and so make known to the public what had been known only to the specialists. The author has, therefore, done a good work in selecting the prominent points in the studies, which have been followed by others, and presenting them in so clear and comprehensive a form.

The extra "Mundane Spheres," concerning which astronomy treats, are here arrayed in their order, and shown to be under one general law of creative nature. Meteors, comets, nebulae, are the atoms which compose the cosmic dust. Nebular rotation, annulation, spheration, are the processes through which this world stuff passes. It is an interesting subject, the only fault which we have to find with the treatment of it is that the author did not call attention to the wisdom of God in this process, as there are such grand opportunities for displaying the power and wisdom of God in this line of thought.

The book is divided into four parts: I, World Stuff; II, Planetology; III, General Cosmogony; III, The Cosmogonic Doctrine. Under the first head the process of world-making is referred to, under the second, planetary decay is mentioned; under the third, incipient stellation. The fourth part merely refers to the development of thought, including the atom theory of the Greeks, the vortical theory of Descartes and Swedenborg, the cosmogonic theory of Kant, and the views of Herschell and modern astronomers.

The author adopts the Lapeaces theory, and carries it through with great stretch of imagination, weaving into it as warp and woof the various facts of modern astronomy.

The facts are: first, the motions of the heavenly bodies; second, the material of the planets, sun, moon and other bodies; third, the nebular phenomena. With the theory he explains the facts, and endeavors to prove the process of world-making. The theory may be true, and God's process may have been such as is here recognized and illustrated. Yet, there may be other laws and other processes, which future discoveries will reveal. For the present, the theory satisfies. We are not disposed to deny it. Prof. Winchell does not advocate an irreverent materialism, or deny the doctrine of creation amid evolution. His book may assist us in taking the step which some will take, using the doctrine of evolution to recognize more of the Divine power and glory in the process of creation.

The work will doubtless be read with great interest, and is worthy of wide circulation. Mr. S. C. Griggs, the publisher, has given to the book the attractiveness which he is accustomed to give to all his publications.

Where did Life Begin? by G. HILTON SCRIBNER. Published by Chas. Scribner's Sons, New York. 1883. 64 pages.

The process of world making has been treated by Prof. Winchell, but the process of world inhabiting is now treated by another author, Mr. G. H. Scribner. The theory of this author is, that the process of world making had been finished, and now world cooling begins. The first place of cooling and incrustating, is at the poles. Here he believes, began the process of world-inhabiting, plant life and animal life having their incipiency at the poles. There are six points in his theory; first, the polar belts contained the first signs of life, as they contained the first incrustations; second, the polar belts became frigid, life departed, the equatorial belts at last, became suited to the animal creation; third the process of world inhabiting went on by migration, from polar to equatorial regions; fourth, the lines of migration were along the corrugations, found in the earth's surface, the channels where the seas are and in the deep valleys of the continents; fifth, the skeletons and remains of the tropical fauna and flora, found in the arctic regions, show what effect the world cooling has had already; sixth, the similarity between the types of life here discovered and those still existing in the tropical region show the direction which life emigrated; seventh, "Earth's wrinkled crust shows to us the beginning of life and our own age gives to us plain indications of its ending."

Excursions of an Evolutionist, by JOHN FISKE. Published by Houghton, Mifflin & Co., the Riverside Press, Cambridge, 1884. 379 pages.

The arrival of man is the point at which Prof. Fisk takes up the clue. The world has been made and has been inhabited. Prof. Winchell and Mr. Scribner have shown exactly how this has been done. Prof. Fisk is now to show exactly how the world has been developing. Evolution furnishes the key to him also. It is marvelous how many things this theory helps to explain. Prof. Fisk is not confined to any one science, but he draws his facts from all sciences, as is becoming when man is introduced. He first treats of geology, shows how Croll's theory explains the process of world-making and world-cooling. He next draws from philology, and shows how the same evolution theory accounts for the world speaking. He then draws from sociology and shows how it accounts for the world's thinking. He then enters the domain of theology, and shows how the same theory accounts for all feeling. Thus the process is made complete. We have begun with cousmic dust and ended with cousmic thought.

The theory has accounted for the whole process. If the facts have not corresponded with the theory throughout, so much worse for the facts. There is, to be sure, at the closing stages, a complication of the subject. The theory is based upon other theories. Croll's theory, the Glacial theory, the Darwinian theory, Spencer's Sociological theory, all of these are built up, and the theory of evolution mounted to the summit. Professor Fisk's book is fragmentary, made up of essays written at different times, as a series of abstracts or jottings from his reading, but they are strung on the same thread, which is now the clue for nearly all scientists, by which they tread the labyrinth of creation with so much confidence. These works all furnish interesting reading. There are too many assumptions in them all to be entirely reliable, and especially in the last book, but assumption secures confidence.

The Golden Chersonesus, and the Way Thither, by ISABELLA L. BIRD, (Mrs. Bishop,) New York. G. P. Putnam & Sons, 1883.

The Golden Chersonesus is another name for the Malay peninsula. The interior of this peninsula is unexplored by Europeans. Miss Bird has made a popular contribution to the sum of knowledge of the beautiful and little traveled region. It is the last installment of her travels in the far east. It is written in the author's usual style and is published in attractive shape. One quotation will give an idea what lake dwellings may have been in ancient times, though it is a description of an Animese town, it consists of a very large collection of river dwellings. Such primitive ramshackle, shaky looking dwellings I have never before seen. I spent an hour among them and I never saw any house whose area could be more than twelve feet square, while many were not more than seven by six feet. These small rooms with thatched roofs and gridiron floors raised on posts six or eight feet above the stream are reached from the shore by a path a foot wide consisting of planks tied on to posts. The river dwellings, I must add, are tied together with palm fibre rope. One of average size can be put together for eleven shillings.

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S. D. PEET, Editor. F. H. REVELL, Publisher.

The editor of THE AMERICAN ANTIQUARIAN respectfully solicits contributions from gentlemen resident in foreign lands. It will be noticed that the magazine embraces several departments beside that of American antiquities, and that these require the collection of information from many countries.. Assyriology, European Biblical and Classical archaeology, Oriental literarure and Folk-lore are all represented in its pages. Besides these there are other topics connected with anthropology, which may be embraced in the scope of the journal, and which make a demand for contributions of a diverse character. The magazine has among its contributors many of the most distinguished scholars, but we send this circular to others, situated in different parts of the world, hoping to receive communications from them

We would call atention to the fact that the journal has a circulation among societies, prominent libraries and specialists, and that contributions sent to it will meet the eye of scholars who are following the various departments. It is also read extensively by all classes.

THE ANTIQUARIAN is the only journal of the kind published on the American continent, and has already come to be regarded as authority on the subjects treated. Gentlemen who desire to reach American readers will find it a most excellent medium of correspondence, and such will confer a favor if they will direct their communications to the editor at his residence. STEPHEN D. PEET.

Clinton, Wisconsin, U. S. A.

WE would call attention to the Department of Correspondence in the AMERICAN ANTIQUARIAN. This department has been referred to by foreign magazines oftener than any other, and we have reason to believe that it is considered very valuable. We desire, however, that it become still more important, especially as we hope to make it a specialty in the bi-monthly The contents will at least be more varied by this means, and we want to put into it as much interesting reading as possible. We would, therefore, solicit correspondence, and herewith enclose a list of topics on which we desire information. In addition to these, however, we would say that anything in the line of Notes and Queries will be acceptable, and we hope that all parties who are at all interested in archæological study will favor us.

Address STEPHEN D. PEET, *Editor*,

Clinton, Wisconsin.

The Editor of THE AMERICAN ANTIQUARIAN is collecting material for publication on the Native Races and the Prehistoric Antiquities of America. All persons who have in their possession books, pamphlets, unpublished manuscripts, or other papers on these subjects, will confer a favor if they will send a copy of the same to the address below. The object is to make this collection of the literature of Archæology and Ethnology as complete as possible, and one which shall correspond to the many collections of relics which are being gathered in various localities. Newspaper articles upon the various discoveries of bones or relics and other prehistoric antiquities and upon local pioneer history, especially if containing accounts of the Indians and their history or traditions, are particularly desired. The Secretaries of Historical and Pioneer Societies, and of Academies of Science or Natural History Societies, are respectfully requested to forward copies of reports and proceedings, at the earliest opportunity, for notice; and publishers are also requested to send books on the above subjects for review in the Magazine.

THE ANTIQUARIAN is designed to be the medium of communication between students of Anthropology in all lands. An exchange of publications is therefore respectfully solicited from the various Anthropological and Archæological Societies of Europe and other countries. Address REV. S. D. PEET, Editor Am. Antiquarian.

THE

American Antiquarian.

VOL. VI. JULY, 1884. NO. 4.

LECTURES ON POLYTHEISM.

LECTURE III.—GERMAN MYTHOLOGY.

We have now to consider the German mythology, one of the most independent of all. In doctrine somewhat like the Persian, for these races alone, of all the Aryans, have given an ethical tone to the contest between light and darkness; in all other respects it stands by itself. It is consequently far from the hypotheses of the philologists who have only succeededin identifying Tyr and Dyaus out of all the lists of the Aesir and Vanir, and if this indentification be correct it leads only to one of many instances of similarity of linguistic origin combined with disparity of functional position. In like manner the Egyptian Thoth and the Babylonian Nabu are instances of absolute functional equivalence, while they have not the slightest phonetic connection. The Heno theists and the Sun and Storm theorists have been as diligent at this as at other mythologies and having a smaller foundation have raised a correspondingly larger structure of hypotheses. The main portion of the German mythology consists in the stories of the Aesir who are the correlatives of Adityas in the Indian and of the Olympian Gods in the Greek systems. They were twelve in number originally, but alongside of these Aesir we find the Vanir, some of whom have replaced some of the Aesir. The Vanir clearly belong to an early form of belief which has been replaced by that in the Aesir. Finally we have the Myths of Odin, the all-father and his brothers, who are not admitted into the number of the Aesir.

The universe consists of nine regions, arranged thus:

Vanaheim.	Asgard.	
	Lichtalfheim.	
Muspellheim.	Midgard.	Jotunheim.
	Svartalfheim.	
	Utgard (Helheim).	Niflheim.

The Vanir or Water Gods included Niörd, the God of the Seas, who dwelt in Noatun; Freyr, the God of heat (not burning fire but genial sun heat) who dwelt in Alfheim in Valaskialf, and Freya usually but questionably interpreted as an earth goddess who dwelt in Folkvang. Freyr and Freya were children of Niord and Skadi. Now it will be seen at once that Niord and Freyr, water and heat, correspond precisely to the two brothers of Odin, to Hoenir and Lodur, who were not admitted into the number of the Aesir. This means, I take it, that in the struggle between the religions of the Aesir and Vanir a compromise was arrived at so that the Vanir deities of water and fire (heat) were retained while the rest of the Pantheon was made up of Aesir deities. The mythical shape of the story is that the Aesir and Vanir contended and after the victory of the Aesir, Niord Freyr and Freya were taken as hostages in exchange for Hoenir and Mimir.

The other Aesir were Thor, son of Odin and Yord, the god of the thunder-clouded sky, the supreme Aos who dwelt in Thrudheim with his wife Sif; Baldur, son of Odin and Frigga, the god of day-light (not the sun), who dwelt in Breidablik with his wife Nanna; Tyr, son of Odin, who had no ascribed home in Asgard, though I can't help thinking he ought to have dwelt in Thrymheim, thunder-home which was given up to Thiassi, the giant father of Niord's wife Skadi; he was the god of storm and of light; Bragi, another son of Odin, who had no ascribed dwelling for himself and his wife Iduna; he was god of song and corresponded to one side of Apollo's function with the Greeks, though I cannot venture to assert that he was ever a sun god as Apollo was; Saga, the history goddess, seems to hold Bragi's homestead at Söckquabeck; Heimdall, the son of Odin and nine virgins who dwelt in Himinbiörg; he had charge of the approach to the rainbow bridge and is unmistakably the rain cloud; Hodur, who is identical with Herenodur and Odar, was son of Odin and Frigga. He is the darkness that kills Baldur, not the deep of night but the twilight like the Greek Hermes; as Hermodus he is the messenger of the gods and carries a colorless staff gambantrin; as Odus he is Freya's husband; while he probably lived with her in Folkvang; but his personality has been much split up in the Baldur myth; Vidar, the son of Odin and Grid lived in Landvidi, Broadland, he is the destined avenger of Odin who with Vali the son of Odin and Rinda, the

avenger of Baldur outlives the Ragnarok or destruction of the gods. I take Vali and Vidar to be the clear day sky and the darkness of night, Mitra and Aryaman, Athene and Leto; but I am not aware that any satisfactory interpretation has hitherto been given to them; Vali probably dwells with Odin in Gladsheim where Valhalla stands; Ulhur the son of Sif dwells in Ydali (Ydalie), he is a great bowman, like Artemis, but is no moon god though his arrows are probably fire-rays. I would suggest that he is the Aurora Borealis of the night. Finally Forset, son of Baldur and Nanna who lives in Glitnir whose silver roof rests on golden pillars is the sun glow of morning, the golden dawn; his office is to administer and clear up all doubt and obscurities.

Such are the Aesir and Vanir. Besides these were the elves, whether light elves of the air, or dark elves of the earth; the Jotuns or ice giants in the north; the sons of Muspel, the fiery warriors in the south; and in Utgard Hel, the goddess of the underworld, the goddess of death, the great Persephone. Loki, the fire god, was at first the brother of Odin, identical with Lodur; but there is also a Vali, Loki's son, who I think mustbe a light god, as the evil nature of fire god more and more recognized at the expense of the good, he became separated from him, until at last, in the shape of Logi and Utgard-Loki, he is recognized as dangerous, treacherous and altogether evil, a fitting substitution on which to erect the Christian doctrine of the devil. Nevertheless, in his earlier form he is the equivalent of Prometheus. However, the sense of the myth became altered under ethical influences afterwards. His family by Angurboda, are the wolf Fenrir, the serpent of Midgard, and Hel. Angurboda is a giantess like Gerda and Skadi, the heirs of Freyr and Niord. These were the only Thurses who were adopted into the Aesir. The meaning of Loki's family is by no means as clear as the mythologists would persuade us. Theile says that Angarboda is the thunder-cloud, Hel is darkness, and the Midgard serpent the shower. He does not say what Fenrir is. All this is mere guessing, and I will turn now to some of the characteristic German myths. In the Ragnarok or twilight of the gods, the universal dissolution, the great wolves, Skjoll and Hati the children of Fenrir, swallow the sun and the moon. Loki, Fenrir, Garm and the Midgard snake make ready to attack the Aesir. Surtur and the sons of Muspell accompany Loki. They break down the bridge Bifröst with their weight. Heimdall sounds his Gallar horn for the last time. The battle is joined. Freyr is slain by Sutur. Odin by Fenrir. Thor and Jormungand, the snake, kill each other. So do Heimdall and Loki. Tyr kills Garm. Vidar avenges Odin and slays Fenrir. How all the rest die we know not, but the only survivors are Vidar and Vali. Hödur and

Baldur are afterwards restored to life, and Magni and Modi, the sons of Thor, join them. These six are all that remains of the old order. Magni and Modi, etc. Strength and courage are mere personifications and not real mythical persons.

The other four, in my interpretation, are Baldur, the daylight; Hödur, the twilight; Vidar, the night darkness; Vali, the sky cleared from storm. In other words, the old order consists of the same light and darkness, whose conflicts are the subject matter of all the previous myths. If I am right, it is the struggle between light and dark, looked at in various aspects, now as a contest between the sun and the cloud, now between summer and winter, now between night and day, now between intellect and ignorance, now between good and evil, that pervades not only the German myths, as at first developed, but also all subsequent modifications of them. It is this that gives them an ethical life and an intellectual meaning, which we often miss in other systems that are artistically more beautiful. If, however, Vidar is the "inexhaustable power of nature," and Vali is "the peasant who, after the victory of the god of heaven, comes out of his dark hut and resumes his labor of tilling the earth," as Wagner tells us, then I see no meaning in the myth, and am unable to conceive how such a story could have grown up. The wolves, again, who swallow the sun and moon, are clearly eclipsing darkness. Hence, Fenrir must be of the same nature. It is clear, then, how he kills Odin, hides the whole atmosphere in gloom, and how Vidar, the cleared sky, destroys him. The biting off of Tyr's hand is plain also. Whoever has seen a thunder-cloud coming up must know how it shows only one side, the other being hidden in the eclipse of that darkness. Hence, the one-handed Tyr, the storm god. The snake, again, who kills and is killed by the thunder god, whom Thor on previous occasions has fished for, who takes the bait of the head of the bull called Heavenbreaker, who then raises its head and spouts venom on Thor, can hardly be the mere showers that Thiele supposes. I think it is the water-spout. If it is so, the physical circumstances of the myth are easily explained. That Heimdall, the rain god, and Loki, the fire god, should kill each other present no difficulty.

Closely connected with this final myth is the story of Baldur; of his death by the mistletoe thrown by blind Hödur at Loki's suggestion; of the refusal of Hel to give him back because there was one being (Loki in diguise) who would not weep for him; of the vengeance taken on Loki by the Aesir. This story has been made familiar, even to those who will not read the beautiful stories of their forefathers' religion in their original shape, in the fine poem of Matthew Arnold. Nevertheless there are points in it which neither the cunning of the commentator nor the genius of the poet has succeeded in explaining or making

consistent. Why is mistletoe the destructive weapon? Why does Loki hate Baldur? If Baldur be the Spring and the mistletoe will not hurt him, because it bears fruit in the winter (which is Waprin's explanation.) I do not see how Loki's enmity arose, but if Baldur be the Day as Tiele, and I think rightly, asserts, then the enmity between him and Loki, the god of destructive fire, who had been thrust out of the twelve, is clear. Baldur, the god of Light, holds the place which Loki, god of Heat, would have held had there been no collision of worship: they are both fire gods, but Baldur, like Aster and Hestia, is the pure beneficient light-giving flame. Loki, like Hephaestus, Tvashtri, Vulcan or Tubal-Cain is the earthly heat-producing, dangerous, and too often destructive fire. The mistletoe seems to me to be originally the storm weapon, the thunderbolt that is produced between heaven and earth, and therefore identical with the sasam, the saxifrage, the rock-splitting plant, which has been traced in so many forms, and proved to be identical with the lightning.

Moreover, in their attempt to explain the myth of Baldur's death, mythologists have neglected the cognate myth of the wooing of Nanna. Nanna was Hödur's foster sister. Hödur had obtained by conquest Mimzig's massive sword and a gold bracelet, whose thickness increased every night. Baldur and the Aesir fought with Hödur. He disarmed Thor, put Baldur to flight, and married Nanna. Baldur afterwards fought with him again and was slain by him. We see from this story that Nanna may be regarded either as the pride of Baldur or of Hödur, but not of both. I can hardly doubt that the magic bracelet is the proof that Hodur is the morning twilight and that Nanna is the evening red, not yet acknowledged by the mythologists, though really not less important in many myths than her twin double, the dawn or morning red; just as we have a double Hermes, a morning and evening twilight in Hermodus and Hödur. This Nanna may be regarded as the pride of the early dying Day, Baldur, or of the gleaming Hodur and her name "Vlopon" is specially fitting to the glowing crimson in the west. This Hödur may well be in possession of the increasing Magic bracelet and of the deadly storm-spear of the wood-birch, for this man, like the forest of Vidas, is merely the dark-cloud. But how the Nanna Vlopon of the mythologists can reject their Spring-tide Baldur and live with the wintry Hödur, how the other discrepancies of the stories can be got rid of is so hard to make out that Wagner is reduced to the usual shift of saying, "In this tale the original meaning of the myth had been forgotten."

The pendant to Nanna is Iduna, Bragi's wife. She had possession of the apples of ever-renewing youth, which are palpably the apples of the Hesperides or the gardens of the west

She takes them with her to Asgard and feeds the gods with them every morning at breakfast. But Odin, Hoenir and Loki go traveling, find a herd grazing, and being hungry, take an ox and try to cook it. An eagle flaps their fire down with his wings, and it will not cook. He desists on promise of part of the supper, eats so much that Loki starts at him with a stake which sticks to him and to Loki and flies off with them. He sets Loki free on condition of his promising Iduna and the golden apples. Loki does so, but she will not give Thiassi any of the apples, so that he remains old and ugly. Meanwhile the gods miss their apples and their youth, and send Loki for Iduna. He brings her back to Asgard and Thiassi, following her, is burned by a fire they light under him before the wall of Asgard. Iduna and Thiassi are co-relatives to Eos and Tithonus. Iduna is the Dawn, Thiassi the grey cloudy morning when the sun is invisible: on such mornings there is no red dawn. Thiassi has carried off Iduna in his eagle or cloud dress. Loki (Het) is ordered to restore her. Without her they all would grow old. When Loki brings her back she is very small, as small as a sparrow or a rat; Thiassi is burned up by the heat of the god's fire on the horizon, and Iduna is restored to her true husband, the divine bard, the sun god. Of course this is not the usual interpretation. Wagner makes Iduna and Thiassi, like all the other gods and goddesses, emblems of Spring and Winter.

But there is another story about Iduna. She and Bragi having no abode in Asgard lived in the boughs of the great world tree Yggdrasil. There the sun-god joined her every eve at sunset. There at night she sprinkled water of Odroin on Yggdrasil and kept it green. Odroin was the inspiration well that Odin had rescued from Gunnlod. But one morning the branches of Yggdrasil hung down; Odroin had dried up; Iduna had fallen into the deep valley to the daughter of Night, and then the gods knew that the end of all things was at hand. This falling of Dawn into Night's valley is not unlike the swallowing of the Sun and Moon by the eclipse wolves; it is the destruction of all things. It is probably of Persian origin. But one learned writer holds that this means nothing more than a local drought and the drying up of an intermittent spring; an "interesting hypothesis," says Wagner. I rather think it a specimen of Teutonic monomania.

Another misunderstood goddess is Freya. She seems to me to be distinctly a moon goddess wearing her halo or magic necklace, just as Aphrodite the Mist goddess wears her cestus. To her was married Odur the Twilight, just as Penelope married Ulysses. Odur left her. She traveled after him and found him; or, as a cognate story has it, she sits and waits for him in her mountain home in the name of Meglada (jewel goddess), her husband Swipdager comes back to her as a beggar, under the

name of Wind-cold, and is recognized and received by her, just as Ulysses is in the Odyssey. "Long have I sat on the high hill, looking for her by day, looking for her by night. All that I longed for has at length come to pass." It must be remembered in this interpretation that Freya is one of the Vanir. In the Aeser system the moon is Masculine, and the sun Feminine, which accounts for there being no sun-god proper in the Norse mythology, and shows the absurdity of making Baldur the Sun. In fact the interpretation of the whole Edda system has been confused for want of proper distinction between the different religious systems that are involved in it.

The Aesir. the Vanir, the Thurses were certainly at one time distinct series of gods, worshipped by different tribes, and were only amalgamated after conflict and perhaps long protracted struggle. Hence we find even the supreme triad of Air, Fire and Water in various forms. We have the orthodox series, Odin, Lodur, Hoenir, and alongside with this the three sons of Forniot, Kari, Logi and Oegir; Oegir being clearly the same as Oceanus. Then again we meet with Odin, Lodur and Hoinir, and also with triads of dignity, not of blood, as Odin, Domar and Saxnot; Odin, Thor and Freya; Har, Jafnhar and Thridi, and I think they are also traces of a Vanir triology in Thiassi, Frey and Niord.

In conclusion I would point out how the old ancestor worship or hero worship, never died out of this northern race. We find Arthur and Charlemagne (the latter of whom is certainly historical), and Frederick Barbarossa identified with Odin, and assuming his traits in many legends; we find Sigfried identified with Frey, and when we come to the later forms of the Niblung story, Attila and Theodrin are identified with the mythized heroes, who in time are in many things only reflexes of the gods. The existence of a higher stage of development in religion as in all other life-growths does not destroy the lower. Olympian divinities exist along with the heroes in Greek deified ancestors. Philosophic Buddhism has incorporated the old Polytheism into the popular belief — Christianity has — at any rate Catholic countries admitted a whole Polytheistic Pantheon under the names of saints and angels.

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SCHLIEMANN AT ILIUM.

"Troy," "Ilios," "Troja." These are the three works in which Dr. Schliemann has given to the world the results of his excavations in the Troad, extending over a period somewhat greater than tradition assigned to the duration of the Trojan war itself. "Troy" described the excavations of 1871–3, "Ilios" those of 1878–9, and "Troja," just issued, those of 1882. In the last, the explorer tells us that he has closed his work there finally and forever, and it may be worth while now to take a glance backward, as well as at the results which were reached in the final campaign, that the aspect in which the problem now presents itself may be clearly grasped.

"Troy" proclaimed to us the existence of five cities upon the height of Hissarlik, four of which were prehistoric. Of these, the first, or lowest, occupied the stratum of ruins from 52 to 33 feet from the surface; the second, from 33 to 23; the third, from 23 to 13; the fourth from 13 to 6½. The remainder belonged to the Greek and Roman city of history. The second (33–23) was identified as Ilium. In "Ilios," we find seven cities, instead of five, the lowest stratum having been divided into two at the suggestion of Prof. Sayce, on the ground of differences in the objects found there, making the first up to 45, the second to 33 feet. The second addition to the original number was already suggested in "Troy," to include a thin layer just below the historic stratum, where the objects bear some resemblance to archaic Etruscan and Bolognese, and it has accordingly received from the explorer the name of Lydian. Thereupon, Ilium naturally became the third city, within the same stratum as before. "Troja" presents seven cities again, but with a change in the lower strata, which is due to the judgment of the two architects who were employed to accompany the explorer. These were Dr. Dörpfeld, who was engaged for four years in the excavations at Olympia, and J. Höfler, of Vienna, to whose technical skill and knowledge much is due. They proved to Dr. Schliemann that, while the first city was the same as described in "Ilios," the second is to be divided into two epochs, during the first of which after a time the plateau was leveled by filling in the north side some ten feet, and the south a foot and

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Troy and its Remains, by DR. HENRY SCHLIEMANN. London. John Murray. 1875.

Ilios, The City and Country of the Trojans, by DR. HENRY SCHLIEMANN. New York. Harper and Brothers. 1881.

Troja, Results of the Latest Researches and Discoveries on the Site of Homer's Troy, by DR. HENRY SCHLIEMANN. With preface by Professor A. H. Sayce. New York. Harper and Brothers. 1884.

a half, so that the objects found in this stratum are to be assigned to the second city, while those of the third in "Ilios" belong to the second epoch of the second city, not to the third city, which now is made to rest upon the second and occupy the greater part of the space from 33 to 23 feet, the walls of the houses being sunk into those of the second, with frequent intermixtures in other ways. The fourth city is the same as before, and so on to the top.

The discoverer originally began his work with large notions of the city of Priam, but when he found, after sinking twenty shafts in the plain, no signs of objects contemporaneous with those of his Ilium on the citadel, he was compelled to give a reluctant assent to the conviction that it was in reality nothing but a castellated height of diminutive proportions, far different from the "wide-streeted city" of Homer. But fortunately, to the Homeric enthusiast this was a thing that gnawed his heart like Ulysses' longing for home in the isle of Calypso, and would not let him rest. The object of his return to the work in 1882 was mainly to make a more determined and systematic exploration of the plain about the hill, and see what would result. Just in front of the southwest gate he ran a trench some 200 feet in length and 10 in width, in which the rock was struck 40 feet below the surface. Two extensive trenches were dug in other parts of the plain, and some shafts sunk, all of which disclosed, in their lowest depths, objects similar to those of the first two cities of the hill, but none like those of the other towns up to the historic period. From this he concludes that the first two cities possessed a lower town of considerable size, but for the others of prehistoric days the acropolis alone sufficed. At last the poet was vindicated, and his admirer is content to rest his labors, but not until the acropolis had also yielded all that seemed likely to prove of value. Extensive excavations were carried on there, especially on the eastern side where little had been done before, also on the northwest and south, and much was done to clear away the old ground and investigate layer after layer with the greatest possible care and scientific precision. Putting aside all the difficulties of the excavations, the problem is no mean one, to determine the exact relations of these unparalleled remains; but we may rest assured that the best has been done that could well be accomplished, and while there may be great difference of opinion as to many debatable points, there can be none as to the earnestness and efficiency with which the work has been performed. The wanton and unrestrained enthusiasm of "Troy" has been sobered, chastened and steadied by the sharpest fire of criticism which a man in his position has ever confronted. Science has gained by it, and with his love for science Schliemann may well be satisfied, since he has compelled acknowledgement that his work is genuine, astounding as its

results have proved to be. He was forced to conquer not only a new world in archæology, but the old world of critics as well. He has done both.

"Troy" told us that the second city was Priam's, because it possessed the Great Tower, the Scaean Gate, the Great Circuit Wall, the Palace and the Treasure. The Tower vanished in "Ilios," being resolved into two walls of different cities which are now decided to be the two epochs of the second city; but several small towers at regular intervals along the circuit wall of the town have taken its place. The Scaean Gate held its own in "Ilios," but has now been deposed from its commanding site on the hill, and transferred to the southwest in the wall of the lower town, no traces of which wall have been discovered except the leveling of the rock in one place, and probably its junction with the citadel at two points. Not that the former gate has vanished, but "Homer never had occasion to mention the gates on the acropolis." In fact, the single southwest gate on the hill has now a newly-discovered sister on the south side, and still another on the southeast, the south gate belonging to the earlier epoch of the second city, the southeast to the later, the former having been destroyed by some conflagration and an edifice constructed in front of its entrance into the city; the other gate was then built to supply its place so that only two of the three were in use at the same time. Those who have familiarized themselves with the plan of the acropolis in "Troy," may have wondered what kind of a city gate could have led plump into the "Palace." The architects have relieved us of this difficulty. The walls that confronted this gate are assigned to the earlier, and the portion of the gate which ran up to them to the later, epoch of the second city. The house just to the left, attributed in "Ilios" to the "town-chief," together with all the treasures, now belongs to the later third city, and the treasures are assigned to the second town, as they all show evidences of fire which the third town does not.

The architects conclude that the first city could have possessed no more than one or two buildings on the height, though we may well ask how this can be determined, as but little of the hill was excavated below the second town. The latter, however, contained a half dozen large edifices, two of which, side by side, within eighteen inches of each other, near the centre of the plateau, are identified as temples from their ground plan which resembles the temples of historic times in many particulars, the larger being composed of a *pronaos* and *naos*, the smaller of a *pronaos*, *naos*, and a third room. The walls were of bricks resting upon a stone foundation, and it is believed that they were baked, after their erection, by fires kindled inside and out. In the walls holes were found, some running through, and others

along the face every fourth or sixth brick. These were originally filled with wooden beams when the bricks were laid, as shown by the impression of the knots and fibres on the clay. Schliemann's idea now is that this wood was intended to assist the material heaped up beside it in burning the bricks more completely; but this certainly has its difficulties, and the suggestion of Chr. Belger (Berlin. Philolog. Wochenschrift) is plausible that the beams were used to strengthen the brick structure as in Gaul (Caes. B. G. vii 23), and served to increase the general conflagration which destroyed the city. The baking of the bricks would then be due to this conflagration, as was so strenuously dwelt upon in "Troy" and "Ilios." The same explanation applies to the city walls which were baked only on the interior face, though parallels for the baking of city walls *in situ* are cited from Borsippa and Scotland, and from Aztalan in Wisconsin by Dr. J. D. Butler. Proof of the use of upright wooden posts to steady and support the front of a wall, as well as a superposed structure, is presented in the roadway of the south gate, and also at the front ends of the lateral walls of the two temples. And just here a discovery was made of prime importance in the history of architecture. The origin of the *anta* of artistic form which terminates such walls in Greek temples has long been a subject of speculation, and as it has not seemed there to serve any practical purpose either static or constructive, it has been supposed to be merely artistic, and intended to accentuate the end of the wall and the beginning of the epistylium. Now the question is answered, and these *antae* are discovered to be survivals of the original pillars of wood which faced the ends of the walls to preserve and strengthen them, and to assist in supporting the roof above. The stone pedestals and remains of six of these wooden posts or jambs were found in position, and they completely covered the front face of the wall. These temples are likely to play an important part in future discussions, and it is a misfortune that nearly one-half of the larger one was destroyed in the earlier excavation of the great northern trench, before it was known what the building was.

Little of importance has been added to the history of the later cities on the height, except that a ravine to the east of the wall of the second city was filled up later than the fourth city, and the town extended some distance in this direction. The explanation that the vast accumulation of debris was due to the disintegration of the brick walls, and to the clay and rush roofs in which the clay would be washed down by rains, and require frequent replenishing, is reasonable. The evidence remains the same that the second city was the most powerful and prosperous of all the prehistoric towns. In a fragment of a metope assigned to the temple of Athene, built by Lysimachus (No.

108), one cannot but be struck by a strange resemblance to the Athene group from Pergamus. The attitude of the goddess is the same. One hand grasps the head of a half reclining warrior, whose arm is raised to seize hers, and a shield occupies the background upon her left arm as there. In detail there are many differences. Separated, as the two groups would be, if the assignment is correct, by a century or more, it is difficult not to see in the Trojan group the prototype or idea which the Pergamenian artist has wrought out in a far more masterly manner.

Homeric parallels are not so frequently cited as in the previous works. One is curiously astray. Casting is said to be in common use in the time of the poet, as proved by the word *chrysochoos*, in Od., iii, 425. It occurs only in the passage in the poems, and is the designation of the smith who beats out the gold (given him by Nestor) into gold-leaf, to gild the horns of the victim which is to be sacrificed to Athene. The only implements used are mentioned. They are the hammer, anvil and tongs. Of casting there is not the slightest intimation, but everything to the contrary.

Dr. Schliemann has proved beyond dispute that Hissarlik is the only site upon which Ilium can be placed, and he has disclosed to the world a civilization in the prehistoric cities which baffles all who attempt to bring it into chronological connection with what we know of its surroundings. Its counterparts are found mainly in the primitive remains of the Terramare and Albano in Italy, in the stone age of Europe, and in the oldest objects from Cyprus. Very little that has been found in Greece falls into line with them, but almost all there is demonstrably later. No stone people, properly so-called, dwelt upon this hill-fortress. In the very lowest stratum the use of metals existed already side by side with implements of stone. A large number of bones collected in the first city during the excavations of 1882, have been examined by Prof. Virchow, and his conclusions are these: The human skulls are possibly brachycephalous, at all events, not dolichocephalous, with no trace of prognathism. The bones of domestic animals greatly preponderate over those of the wild species, though the wild boar and deer are recognized positively. Hitherto the horse had been but doubtfully ascertained there; but now its presence has become a certainty. Bones of cattle are very numerous, as are those of sheep, goats and swine, and occasionally, their guardian, the dog. The only domestic animal that appears to be wanting is the cat, which indeed does not appear in Greece very early. The chase, as is plain, furnished but a supplement to the means of subsistence, not at all the principal means of supply, holding a minor place by the side of fishing. Beef then furnished a much more con-

siderable portion of their food than is now the case in the Troad, and generally in the east. The objects from the tumulus of Protesilaus, just north of the town, across the Hellespont appear to belong to the same period as the oldest city, and the conclusion is drawn at once, though not by Schliemann, that the tide of emigration was from Europe southward, instead of the reverse, which agrees with the latest views put forth by Pœschel, Schrader and Penka, that the original home of the Aryans was in the vicinity of the Baltic instead of the Caspian. But whether these views are more than the creatures of a day remains to be seen. What is needed is more evidence, more men like Schliemann, who have the means, time and zeal to bring up from their lowest depths the remains of that dim past whose records are potsherds. Crete, Cyprus, Asia Minor, Syria, Thrace, Greece, these hold the keys of the problems beneath their soil, awaiting only the approach of the spade to deliver up their secrets.

A. C. MERRIAM.

THE MYTHS OF THE RACCOON AND THE CRAWFISH AMONG THE DAKOTAH TRIBES.

The Raccoons and the Crawfish: the Ponka version. A Raccoon wished his brother to accompany him, so he sang thus to him, the latter being at a distance:

"Younger brother Coon,
Let us go to eat grapes,
Younger brother Coon."

The younger brother replied that grapes gave him the cholera morbus. Then his brother suggested hackberries, but these were not acceptable, as they produced the opposite effect. Nor would the younger Raccoon agree to go after buffalo berries, as these caused hemorrhoids. At last the elder brother invited him to go after Crawfish, to his great delight. As they went, they considered how they should kill the Crawfish. They stopped when they came near the village, and lay in the path, pretending to be dead. The elder one told his brother not to move at all when the Crawfish felt him to see if he was dead. By and by a Crawfish approached, but when he saw them, he passed to one side in order to avoid them. Then he went to them, and kicked one on the head; but the Raccoon did not move. So the Crawfish ran to tell the news. Very soon the

cry resounded throughout the village: "Two of those whom you call Shell crushers lie dead!" Then there was great confusion. The crier proclaimed the command of the chief, "You shall dance. Halloo." Then all the people, including even the little children, went to the place where the Raccoons were. Last of all, a very aged Crawfish man arrived, leaning on a stick. "Stand off! These I-shti-ni-ke are cunning. Be ready to flee if they are alive! Let us see! Test them. Tickle them on their sides," said the old man. This was done to one of the Raccoons, who did not stir. Then they went to the other, and the Crawfish thrust his claws up the nostrils of the Raccoon, who did not move. When he was about to sneeze, they left him and went back to the other, and the Crawfish raised his eyelids at the very edge. The Raccoon did not show the least sign of life. There was probably a fourth trial, after which they concluded that the Raccoons were dead. Then the Crawfish people formed a circle around the Raccoons, and began to dance. The old man sat in the middle, beating a gourd rattle on a pillow, and singing this song:

"Two Shell-crushers lie dead!
One has a long heel.
The other has a spotted face. Halloo!"*

"O elder brother! attack those next to you," said the younger Raccoon. Up they jumped and began to knock down the Crawfish people, whom they devoured. The people scampered homeward, but most of them were overtaken and killed by the Raccoons. The latter had eaten to their satisfaction, so they desisted from the pursuit. "Ha! Ha! It is just as we desired. We have felt full from eating."†

The Kansas version is very short: The elder Raccoon asked his brother to go and eat grapes; but the latter said his teeth chattered when he ate them. Then he was asked to partake of burr-oak acorns; but these made his teeth ache. Plums, too' were objectionable; but the young Crawfish were acceptable. One of the Raccoons pretended to be dead; and a Crawfish found him. All the Crawfish people arrived there. They pinched the Raccoon, but he remained motionless. They punched him, then pinched him on the rump, but no sign of life was shown.

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* Another version of the song is as follows:

"Two Shell-crushers lie dead!
Spotted face! Spotted face!
Long spotted tail!
Big one with offensive hair!"

† Another version ends thus: Only two of the Crawfish people, a young male and a young female survived. "Begone!" said the Raccoons, "you shall be called Man-shkan, Scamperers over the ground."

By and by they danced around him, as one sang thus:

"Of those who crushed our shells last summer
One lies dying just here!
Young one with a black stripe across the eyes!
Young one with a striped tail!
Young one with sharp heels!
Young one with long toes!
Young one with bluish-black back!
Just here is he dying!"

Then the Raccoons arose suddenly, and began to kill the Crawfish people. Only two were spared, one being a male, and the other a female.

The Osage version of the same: Two Raccoons met one summer day. "Elder brother, I have come," said the younger. "Ho, younger brother, it is good. Younger brother, let us go to eat grapes." "Elder brother, my teeth chatter when I eat them." "Younger brother, let us go to eat strawberries." "Elder brother, I do not eat them, my teeth chatter." "Younger brother, let us go to eat plums." "Elder brother, I do not eat them; they are constipating." "Younger brother, let us go to eat Crawfish." "Elder brother, I am used to eating this sort of food." They departed. "My dear little brother," said the elder, "pretend to be dead." So the little one acted accordingly. Then his brother yelled, and the Crawfish people came. "My little brother is dead, so I wish you to dance over him," said the Raccoon. Then they felt the body, and scratched it. "Fourth son is really dead," said they, "we will dance over him." Then, when they had called to the others, all the Crawfish people enjoyed themselves, having two old men to sing the dancing songs. When they had danced for some time, the elder Raccoon said, "Fourth son, arise suddenly and begin to crush their shells. But spare two for perpetuation of the race. Let us crush them in our mouths." Then they killed many of them.

The next summer the two Raccoons met again. "How are you, Third son," said the elder. "Elder brother, I am hungry." "Let us go to eat hackberries," said the elder. "Elder brother they are constipating." By and by he said, "Elder brother, I continue hungry." "Younger brother, let us go to eat black haws." "Elder brother, they are contsipating." "Younger brother, I wish to depart. Let us go to eat muscles." "Elder brother, I never can get them out of the shells." By and by he said, "Elder brother, I have said that I was hungry." "Third son, I wish you to eat a snake," said the elder. "Elder brother, the snake would be sure to bite me." At last the elder said, "Third son, for what are you hungry?" "Elder brother, I wish to crush the shells of my own kind of food, the Crawfish." They reached the place. A large spring was there. "Little brother," said the elder, "clear the ground of grass. Remove all the grass

around the spring." Then he said, "Little brother, pretend to be dead." "Elder brother, I am too great a laugher," was the reply. By and by he said, "Elder brother, teach me the songs." Then the elder one said, "Listen to me." He sang. "Elder brother, I do not know how to sing the first word." "Third son, where is the difficulty? I merely cry." Then the elder Raccoon yelled four times. When he yelled the last time, he lay as if dead. Then the younger one cried. Then the Crawfish people heard him and said, "Fourth son is crying because his elder brother is dead. Poor little fellow!" "I wish my elder brother to live," said the Raccoon. The Crawfish people examined the body. "Does his heart move? You can decide for me what should be done," said the Raccoon. "Fourth son, a long time ago, we danced over one and he revived," said they. Then they assembled for a dance. One aged crawfish beat a drum, and they danced. The Raccoon sang thus:

"Little one with claws sticking out!
Little one with claws sticking out!"

Then the Crawfish sang thus:

"Of those who crushed our shells last summer,
One is dead!
Young one with a long heel!
Young one with a black stripe across the eyes;
Young one with a spotted tail!
Young one with long toes!
Young one who drags his tail along the ground!"

At a signal the elder Raccoon arose, and the brothers began to kill the dancers. "Elder brother, spare one," said the younger. "Little brother, I am full. I am nearly ready to burst." "Elder brother, save some for mother," said the other. They started for home. "Elder brother, pronounce the words of the song," said the other. Then the elder Raccoon repeated them, and the younger one shouted them as they entered the village.

"I have devoured the animals with many claws sticking out!
I have killed the animals with many claws sticking out!
Striped face has returned from war, having struck a foe!
Long heel has returned from war, having struck a foe!
Spotted tail has killed a foe!"

J. OWEN DORSEY.

WASHINGTON, D. C.

THE ANTIQUITIES OF MEXICO.

SECOND PAPER.

As we proceed northward we pass beyond the plateau of Mexico, and the limits of its resident civilization, entering a less explored region within whose inchoate bounds swarmed a great number of semi-civilized tribes scornfully designated by the Aztecs as Chichimecs or dogs. Here mounds, temples, idols, collections of pottery, axes, walls and galleries, have been mentioned by various writers, though there scarcely appears in their catalogues of ruins anything which marks its authors as more developed or interesting than industrious savages, until we reach the ruins of Quemada. Here is a fortified hill from which numerous roads — in many instances raised on causeways — diverge, crossing each other and leading to distant points perfectly straight and paved with rough stones. (Captain Lyons Travels). The summit of the hill is a narrow plateau reaching at its northern end a width of 500 yards. Its southern extremity is covered with walls and terraces of solid masonry upon which were found a series of ruined and involved structures, whose roofs were evidently shaped from flat stones supported by beams, also a large square bounded by walls or terraces within which are pyramidal mounds, the foundations of tanks and reservoirs for water and disused acqueducts showing the substantial character of the structures, and the care, skill and devotion which attended their erection. The works are built of porphyry (Burbank, Lyons), quarried from surrounding hills and cemented with mortar.

These works have given rise to considerable speculation respecting their origin and uses, and have, from a note in Clavigero, been identified as an early halting spot of the migrating Aztecs. The almost entire absence of plastic ornaments or sculptures is remarkable, lending some support to the view that while it once formed the metropolis of a powerful and intelligent tribe, they subsequently by voluntary and peaceable desertion vacated these imposing ruins, moving off with their goods and properties in a tribal exodus to some southern center.

Far north in the province of Chihuahua, almost on the northern boundary of Mexico, and on the river of the same name, are the ruins of Las Casas Grandes. Here upon a slight elevation, in the midst of a fertile park, rise the dilapidated walls and towers of an ancient city. The pictures from Mr. Bartlett's sketches, in his visit to the locality (*vide* Bartlett's Personal Narative, Vol. II), show the tall shafts, some 50 feet high, of sandy

bricks, left in minaret-like isolation by the crumbling down of the intermediate partitions and walls, which once united them into a habitable village. One large rectangle which obviously formed the basement of a large building, enclosed 200,000 square feet, with its walls still standing on some sides. Doorways and windows pierce the wall, and the great height of the walls indicate a pueblo-like structure, with many stories, around which were clustered less elevated houses, the whole colony probably closely compacted into a small area, while within every structure, crowded compartments permitted the communal accommodation of a large number. Mounds abound in this region, and from those which have been opened, "pottery, metates, stone axes and other utensils" have been taken. These singular and striking remains have of course been attributed to early Aztec settlements on their southern progress to Mexico. But as Bancroft remarks, they belong to the archæology of New Mexico. "They were the work of the same people at about the same epoch,"and may be assigned to a different race from the Aztecs, or perhaps to a transitional phase which a pueblo-like tribe assumed as it drifted from its original seat and slowly responded to the influence of a southern culture.

Mr. Norman's antiquarian researches in Tamaulipas, a northern province of Mexico, and lieing along the gulf, have revealed "edifices, pyramids and tombs," many curious sculptures, some of remarkable strength and a peculiar type, aud piles of debris overgrown with vines and hidden in the recesses of luxuriant forests.

Miscellaneous objects of archæological interest have been exhumed from mounds, taken from their concealment in the earth where Spanish zeal had buried them. They have been found associated with the ruins of cities, or accidently encountered on the surface. Through them we seem to approach more closely the past life of these people, and are permitted to catch glimpses howerer obscure, of their methods, their ideas, and their affinities, while we better realize at every new discovery of an elaborate relic, the patience of their art and the quality of their minds.

In Oajacca, at Tehauntepec, were found terra-cotta idols, a pentagon of polished agate, and a hexagon of lydian stone flecked with pyrites. At Monte Alban, sculptured granite blocks are figured by Castaneda. Here also, copper coins, lava mirrors, and agate necklaces have been found. At Zachila, were two stone and terra cotta idols, the first a foot in height, made of yellow grit, another of terra cotta expanded with a wing-like head-dress, both squatting but curiously diverse in composition and expression. Sockets behind these figures are thought to have been intended for torches or possibly flowers.

At Mitla, stone wedges, axes and chisels of hard copper,

have been found, a terra cotta head with helmet intellectual in expression, and a ludicrous stone manikin. Perhaps the most perplexing and unique object in this catalogue is a colossal head 6 feet high found near the volcano Tuxtla in Vera Cruz. It presents the features of a negro, and naturally has invited the publication of theoretical vagaries. At Amatlan a grim head was found carved from stone and quite anomalous in its cranial form. From Orizana we have an excellent illustration of a sacrificial yoke cut from a green jasper, one of those heavy rings which held down the head of a victim on the sacrificial stone. The limestone, statue from Pamico, bears some resemblance in the disposition of the head dress to the Aztec Priestess figured by Humboldt, described further on. This region yielded to Mr. Vetch a number of aboriginal statuettes, and flutes, whistles, birds, toads and similar toys impart a playful interest to its archæology.

Fig. 1. Sacrificial Calendar Stone.

The province of Mexico has yielded very important and expressive specimens, as we should expect, though of course the iconoclastic temper of the conquerors was developed here to a degree commensurate with the variety and extent of the aboriginal skill, though we may in the future contemplate a series of

rich finds. Near Atlixco a Monster's head and a serpent cup, and at Tlascala, wooden *teponastles* were found by Dupaix, also a mask of green agate, exquisitely scultured, some mortuary vases and a stone idol. In the southeast a great abundance of remains, including human bones, pottery, stone images, metates, etc., have been dug up from tombs, while circular sculptured stones, supposed by some to be sacrificial, and by others gladiatorial. These disks are about 3 feet in diameter, 9 inches to a foot in thickness, are geometrically inscribed and appear to offer some resemblance to the celebrated calendar stone of Mexico.

Three famous and extraordinary monuments of Aztec civilization, are the Calendar Stone, the Sacrificial Stone, and the idol called Teoyaomiqui. They were dug up in the Great Plaza of Mexico, where doubtless they lay amidst a wealth of undisturbed material as original and curious as they. (Figs. 1 and 2.)

The Calendar Stone is a parallelopipodon of porphyry, on one side of which a circle 11 feet 2 inchs in diameter is carved in low relief, made up of concentric circles, between which are regular divisions, each enclosing some pattern or figure, the whole very accurately composed and completely symmetrical. The face of the sun god animates this exquisite complication of lines and symbols in the very centre amid the emblems of chronometry. Showing it to be a table of the secular and religious year which indicated the order of seasons, the movements and positions of the sun and the recurrent festivals of their religion.

Fig. 2. Sacrificial Stone.

The so-called Sacrificial stone has provoked considerable controversy amongst archæologists, and recently Sr. Orozco-Y-Berra in the Anales del Museo Nacional de Mexico has opened the discussion anew. It is a cylindrical disk of porphyry 9 feet 10 inches in diameter, 3 feet 7 inches thick, and about 28 feet in circumference. The lower side which lay uppermost as it was found, is smooth and flat, the top convex with designs in relief, a basin is cut in the center and from its side through the apex of one of the rays passes a canal cut down more than half way through the stone. Around the cylinder are sculptured 15 groups, of two figures each. (See Fig. 3.) These groups are identical and represent two warriors, one in the act of accepting, the other offering gifts. Gama ascribes the tradition of this stone having been a sacrificial stone to the presence of the canal which he believes to have been dug out together with the central cavity for the purposes of mutilation and disfigurement. He directs attention to its similarity with the Calendar stone and in a series

of ingenious surmises and references endeavors to establish its use in determining the festivals of the sun and to show that the 30 figures on its circumference represent the 30 solemn dances given twice a year as the sun crossed the zenith; the erect figure, distinguished by his enormous headdress (Quetzaltonameyatl) being the leader of this savage polonaise. The hieroglyphics accompanying each group indicate the villages that assisted in these pretentious rites.

Fig. 3. Sculptured figures. etc.

Humboldt rejected this interpretation, though he recognized its character distinct as from a true sacrificial stone, the latter being of green jade block-like, the surface convex and never carved. He considered it designed for the gladiatorial conflicts between captives and their assailants, when the former were permitted to fight for their release. The figures around it represented the conquests of an Aztec king. Sr. Ramirez adopted neither of the previous views, but regards the block as a votive slab dedicated to the sun, whose emblem it bears, and inscribed with figures of a Conqueror-King Tizoc. The conquered, one is seen doing obeisance to the other, the latter holdinga bunch of arrows in token of subjection, pointed downward, and in the other a sign of submission, while the separate hieroglyphics indicate the name of the subjugated people. Sr. Orozco Y Berra, has examined the subject wi h true antiquarian zeal and scholarship, and modifies all pre-existing theories. He says it is a *Cuauhxicalli*, which was a peculiar class of sacrificial stones holding a religious and historical character, "a votive monument to be consecrated to the sun, but at the same time a page

of the annals of Mexico, a compendium of the exploits of the monarch, its maker. Its symbolic deity was Xiuhtecutli, the lord of the year, and the harvest called also Xiuhtecutli Tletl the lord of fire." The Sun was the creator of all things, his worship extended north and south over the continent, the richest temples dedicated to him, there existed an order of knights who acknowledged him as their patron and constituted a powerful order. To him this tablet was dedicated by Tizoc, the seventh Aztec king. His prominent figure is seen in the first group, ornamented with jewels, gold tassels and imposing plumes. He thus commemorated his triumphs and expressed his gratitude to the great Xiuhtecutli. The figure of the circle on the surface represented the sun, the triangular projections signifying rays, the trapezoidal space lights, with much symbolic language of a curious and not always satisfactory significance. The figures on the circumference are translated similarly, and compose a graphic manual of the peoples subdued by Tizoc.

As for the cavity and the channel, their regularity and rational construction favor the supposition of a sacrificial design. Doubtless they received the hearts and blood of victims, the recorded purpose for which such excavations in this class of stones were intended.

The third relic disentombed in grading the Great Plaza of Mexico was the stone idol. This most frightful production is supposed to unite in its loathsome details the representation of the God of War, Goddess of Death and God of Hell and Gama has exhausted his erudition in explaining its complicated appendages. The burial vase found in the Plaza of Tlatelulco is a *chef d'oeuvre* and in execution design and symbolism equally beautiful. The winged head of eternity, the wreath of sunflowers and maize, denoting fruition and abundance, and the neatly conceived lid form a surprisingly perfect and graceful ornament. (See Am. Antiq., Vol. V, No. 1, frontispiece.)

At Tezcuco a very interesting basalt figure representing an Aztec Priest clad in the skin of a victim is drawn by Nebel, the natural skin is red and the outer covering white. This filthy rite was practised at many festivals, and in the services of Xipe the wretched celebrants wore for days the rotting skins of flayed sacrifices, executed in a previous festival. Tylor figures a number of attractive relics from Tezcuco amongst which an alabaster box holding jade marbles as large as pigeon's eggs and polished, is strikingly elegant, and may have been regarded by Tezcucan experts as a unique example of *rococo*? Humboldt gives a figure of an Aztec Priestess, and discusses the analogies suggested by it at considerable length. The head dress resembles the calantic of the heads of Isis, the Sphinxes, Antinous, etc., "the plaited drapery that encircles the heads incrusted on the pillars of Tentyra. The fluted pads reaching towards the houlders resemble masses of hair in the statuæ of Isis at the

Villa Ludovisi at Rome. A singular bag of hair hangs down behind and is tied in a knot, specimens of which have been seen on a statute of Osiri's in Bronze at Veletri."

Of course the previous pages present only an abstract, from which, however, nothing of characteristic value has been omitted, of the vast mass of material which has slowly accumulated through the industry of travelers, the reports of societies and the occasional papers of theorists and tourists. Bancroft has gathered into a large volume the compact details of these numerous observations, and arranged them with scholarly discrimination, and the most judicious skill. They have introduced to us a race of indigenous culture, variously affected by their surroundings, and differing in their tribal aspects, in customs, art and beliefs. Aztec, Tezcucan, Zepotec, Miztec and Totonac, are expressions of an identical cultus modified by external influences, national success, personal pre-eminence of unusual minds, traditional lore, but made more striking by contrast with that Toltecan civilization which seems to have early disappeared from Mexico, and resumed its refined sway in Yucatan. The evidences of their art show us a people profoundly affected by a wild and ominous mythology, and the most significant remains of their architecture are the residences of their despicable idolatory. Though they afford no such edifying and inviting spectacles as have previously been suggested by the monoliths of Copan or the symbolic plaques of Palenque. Their art had not yet touched, if it ever could, that decorative elegance noticed there, and their ideas were never exhibited in such chaste and attractive forms.

The Nahuan nations present fascinating problems as to their origin and the clouded past whence they had emerged, their antiquity, and their possible relation to geological changes. They would teach us, if we could solve the enigma, a wonderful ethnic story of migrations, and might reveal extraordinary physical revolutions as their cause.

They were a savage people, passing through that fantastic and superstitious stage of civilization where the accumulated whims and terrors of a ritualistic worship embodied in a powerful and relentless priesthood, protected by an indulged and overbearing aristocracy, and appealing for its authority to the credence given to tradition, restrain invention or discovery, and exhaust the nation's attention by the ceaseless repetition of its mummeries. Whether they would have developed further, awakened from their intellectual somnolence and displayed those mental qualities which insure a self-perpetuating and modern civilization in the possession of books, science and poetry, is doubtful. They were perhaps never destined to pass beyond a semi-barbaric phase of thought, spending their energies in the construction of symbols and idols, and perpetually involved in a stupid round of undecipherable mysteries.

L. P. GRATACAP.

LIFE AMONG THE MANDANS AND GROS VENTRES EIGHTY YEARS AGO.

AS DESCRIBED BY A PARTNER OF THE NORTH WEST COMPANY.

The Mandans were unknown to white men, until they were visited by the Sons of Sieur Veranderie, who reached the Missouri, by way of the Mouse river, and, in January, 1743, discovered the Rocky mountains. The Jesuit Coquard, who had accompanied the Veranderies in some of their expeditions, writes that they first met the Mantanes, and next the Brochets. After these, were the Gros Ventres, the Crows, the Flat Heads, the Black Feet and Dog Feet, who were established on the Missouri, even up to the Falls, and about thirty leagues beyond they found a narrow pass in the mountains.

After the organization of the North-west Company of Montreal, English traders came from the Assinaboine river, to trade with the tribes of the Missouri. The compiler of this article has in his possession a copy of the unpublished journal of Alexander Henry, a partner of the North-west Company, which contains the following account of what he knows of the condition,position and customs of the Mandans at the beginning of the present century, and extracts from which are worthy of preservation for the use of the antiquarian and ethnologist.

On the 7th of July, 1806, Henry left the post of the North-west Company at the junction of the Pembina with the Red River of the North, and on the 12th he arrived at the establishments of Riviere la Souris (Mouse river), on the south side of the Assinaboine river. A Hudson Bay Company post was on the north side, where a North-west Company post was once situated. He found the Hudson Bay Company's people very busy in making hair lines which are used to fetter horses. He writes: "The hair which they commonly make use of, is that which the buffalo has between the horns, which is sometimes upward of a foot long. They also make use of the horse hair for that purpose, which is much stronger."

The post near the Mouse River of the North West Company was in charge of F. A. LaRocque. On Monday the 14th of July the expedition left for the Missouri, consisting of Henry, Allan McDonald, T. Viandria, Joseph Du Charme, and Hugh McCracken, * the guide an old Irishman who had once been a soldier in the British artillery. McCracken was the per-

* Lewis and Clarke found McCracken in 1804 at the Mandan Village where they wintered. In an account of their expedition published in *Harper's Family Library*, vol. 1, page 125, under date of November 1, 1804, is the following: "Mr. McCracken the trader whom we found here set out to-day on his return to the British fort and factory on the Assiniboin River, about one hundred and fifty miles from this place."

son who Lewis and Clarke found in October, 1804, trading among the Indians. On the 19th Henry and party came in sight of the Missouri. He writes in his Journal: "Descending the high banks we came to the river Bourbeuse [Bourbeux, Moiy.] We had much difficulty in crossing: on both sides nothing but soft clay, into which our horses sunk almost up to their ears. Having got through we washed and cleaned them, and ourselves in the Missouri * * * At 2 o'clock we saddled and proceeded on passing near to the water side. At the foot of the Lodge de Serpent is a bank upon the north side of the Missouri, about three hundred feet high; the side fronting the river is very steep and barren composed of gravel intermixed with a quantity of flat decayed stones of bluish and iron color with some streaks."

A short distance from the foot of the hill was a Gros Ventres winter village, and at 4 o'clock in the afternoon they arrived opposite the mouth of the Knife River, on the bank of which a mile from the Missouri, was also a village of Gros Ventres. Riding down on the north bank of the Missouri, a distance of five miles, to a Mandan village, "we passed," writes Henry, "through one of their old villages that was abandoned a few years ago; they have now built about a mile lower down the river. Near this deserted village we saw great numbers of the dead exposed upon stages about eight feet from the ground. The envelopes or coverings are generally of dressed leathe- and parchments, many of which were still good, whilr others were decayed, and nothing but the bones appeared. e * * We now met a Mandan who was well armed, he ac* companied a party of women that were hoeing corn, and he served as their guard. On perceiving us, he instantly came up and shook hands with us and expressed himself by signs that we should put up at his village. We saw numbers of women and children at work in the corn field.

Just before we entered the village we were met by the chief of the place, Chat Noir * [Black Cat] and a number of the natives. Every one of them were shaking hands with us, and bid us welcome. The chief then conducted us to one of his huts, appropriated for the reception of the strangers. He has another, in which the principal friends of his family resides. He keeps one of his wives, in the one we were in, to attend upon his guests, cook, bring water, etc., and to serve as a bed fellow if required.

In a moment, the whole village flocked around us, and all were curious to see what articles we had brought to trade, and they were neither troublesome, nor impertinent. Having unsaddled our horses, and taken our baggage into the hut, the

* Lewis and Clarke made Poscopseah or Black Cat, the first chief of the village, and the grand chief of the whole Mandan nation.

chief gave our horses in charge of a young man, and told us we need not be uneasy as there would be good care taken of them.

On going into the hut, we found buffalo hides spread on the ground, before the fire, for us to sit upon, and soon after we were presented with two large dishes of boiled corn and beans, after which they gave us another large dish of boiled dried meat, but very few of us could eat of it, as it had too strong a taste and smell.

After some other details which we omit, Harvey writes that when night came: "One young man brought in our horses, and put them in the same hut along with us, upon the right hand, on entering, and ourselves upon the left; a space was enclosed with a railing to keep them within bounds. This custom causes their habitations to have a very disagreeable and offensive smell. This precaution of theirs is to keep the horses from being stolen by the Assiniboines, or other enemies, who are frequently lurking about the village.

"Towards evening, having gone down to the river side, I observed the custom of washing themselves in the Missouri. Both men and women make it a rule, every morning and evening, to go down to the river, and wash for some time; the men make use of the clay to wash their hair, which answers the purpose of soap to take out the white and red earth with which they daub it, after having washed. Modesty in the female sex appears to be a virtue they are unacquainted with. They wear a kind of leather shift which reaches down to the calves of their legs. This they slip off some distance from the shore, and walk very deliberately into the water entirely naked, in the presence of old and young who seem not to pay any attention to them. * * * * The men make use of no other covering, in the summer season, than these buffalo robes, and even these are seldom worn within doors, and only thrown on when they go out to visit or walk about the village. Both sexes sleep naked. Their beds are raised about two feet from the ground, and hung around with dressed skins. In summer they seldom use any coverings at night, but lay like so many brutes." * * * * Mr. Henry gives a description of their lascivious dances which is too indelicate to publish. He writes under date of:

"Sunday, July 20th. At daybreak we were all up, and I took a walk down to the river, where I observed the same ceremony of washing as last evening, with as little reserve as before. Our host on our return presented us with some dried meat, and soon after a dish of corn and beans, but as it is not seasoned with any kind of grease or fat, after the first meal it has a very insipid taste. The corn is generally pounded or bruised in a wooden mortar, which is fixed fast and firm in the ground, in one corner of the hut, and this is the first work per-

formed by the women in the morning. Their sweet corn and beans are boiled whole; they make use of large earthen pots of their own manufacture, made of black clay, of which they have plenty near their villages. They make them of different sizes, from five gallons to a quart. In these vessels is never anything of a greasy nature. * * * * * The bottoms of the pots are of an oblong shape; it therefore requires much care to keep them from upsetting, for which purpose when they are put to the fire a hole is made in the ashes to secure and prop them erect, and when taken away they are placed upon a sort of mat made of the fibers of the bois blanc; these coils or rugs are made of different sizes, according to the dimensions of the several pots, which keeps them firm and secure. Some of these pots are provided with two cones, or handles. * *

Baptiste La France made his appearance here. This man had left the Prairie la Souris [Mouse River] with a small assortment of goods for the purpose of trading, equipped by the Hudson Bay Company. He now resides upon the south side of the river, at the great Mandane village,* and hearing of the arrival of white people, he came over to us. He now informed the chief, Black Cat, who his guests were and the cause of our visit, which was mere curiosity. [The chief] instantly retired to his family hut and brought out his flag, which was given him in 1804–5; they alsogave him a silver medal, and the same articles were also given to the principal chief of each of the other villages, also several very useful utensils were left amongst them.† I saw the remains of an excellent large corn mill, which the foolish fellows had demolished on purpose to barb their arrows; the largest piece of it which they could not break nor work up into any weapon they have now fixed to a wooden handle, and make use of it to pound marrow bones, to make grease."

We were now desirous of crossing the river, therefore sent off La France to engage people of the opposite village to come over for us. * * * * * * We were now informed that eight canoes were in waiting for us, from the opposite side, and the same number of young men had come over to assist in crossing our horses. * * * * On our going over to the war side we found the chief of the Great Mandan village, Le Gros Blanc. He was waiting with his own canoe to ferry over Mr. Chaboillez and me. He appeared very

†To each chief, Lewis and Clarke presented a medal, a flag, and a uniform coat. In the narrative of the expedition is the following sentence: "A variety of other presents were distributed, but none seemed to give them more satisfaction than the iron corn mill, which we gave to the Mandans."

‡The Mandans, about 1760, were settled on the banks of the Missouri, eighty miles below, seven villages on the west and two on the east side of the river. The two villages were reduced by small-pox, and moved up the river and settled a village near the Receivers, and afterwards the people of the other village joined them. In 1796 they were in two villages at the points where Henry found them, on opposite sides of Missouri, about three miles apart.

attentive and polite in conveying our baggage on board. We now perceived another American flag flying in the village on the south side of the river, while that of the Black Cat was still displayed over the hut we had occupied. Our conductor now informed us the flag we saw in the opposite village was his property, and had been hoisted by his orders over his own hut, where he begged we would take up our lodgings. The young men, I observed were very prompt in getting our horses over. They fastened a line to the horse's mouth, the end of which one of them takes in his teeth, and swims on ahead, while others swim along on each side, and in the rear, draws the horse on very expeditiously. They swim remarkably swift, and notwithstanding the Missouri at this place is half a mile wide, and the current very strong, they drift down but a very considerable distance before they land.

Their canoes are of very singular construction and a stranger would scarcely dare venture his life in them to cross such a deep and rapid stream. They are of a circular form; the timbers are nothing but a few bent willows of about three inches in circumference, over which is stretched a raw buffalo hide, with the hair inside, and sewed first to the gunwales which are generally of a willow, about two inches in diameter. I was really surprised to see the great weight that one of those slender vessels would carry. We embarked, baggage, saddles, etc., weighing at least 200 pounds, Mr. Chaboillez and myself, and our ferryman, who was a remarkably stout fellow. Our canoe or dish would have supported at least 100 pounds more. What they make use of, in lieu of a paddle, is a pole about five feet long, split at one end so as to admit of a piece of board, about two feet long, and half a foot broad, which is lashed to the pole and forms a kind of cross, and as there is but one made use of for each canoe, and he that paddles pulls directly for the opposite shore, every stroke he gives turns his dish almost entirely around; when, to preserve his position and place him fronting his intended, route he must give a stroke upon the other hand which brings him up again, and so on until he gets over the river, which, however, is not accomplished until they have drifted down nearly a mile.

Some of them, I observed, were more expert than others in managing their dishes, and did not drift more than a quarter of a mile. But as these vessels are very light they have the precaution to carry them upon their heads, or slung upon their backs to a considerable distance higher up the river, than where they wish to land. When we were on the water our conductor repeatedly made signs to us to salute the flag, by firing our guns, but we did not think proper to comply with his wishes or pretended we did not comprehend him.

We soon after landed at the village, which is situated upon the very edge of the bank. Here we were received by another

chief called Le Grand * who insisted upon our taking lodgings in his hut, which stood near the edge of the banks. We accordingly entered it, but soon after we were visited by several other principal men, who requested some of us to take up our abode in their huts during our stay among them. La France advised us to do so, telling us we would be more at our ease by separating than if we remained all in the same hut. Accordingly Mr. Chaboillez and his people, consisting of an Indian who was his brother-in-law, and Mr. Allen McDonnell, took up their lodgings with Hairy Horn, and our guide, Hugh McReacan, (Cracken) Straight Horn, myself and my people, T. Viandrie and Joseph Du Charme, remained with Le Grand, a very civil fellow. This arrangement having been settled and instantly put into execution, we were provided with beds, or buffalo hides to sit upon. * * * * * We paid a visit to Le Gros Blanc, who thought we had somewhat slighted him in not taking up our residence in his hut, but kept the flag flying in honor of our arrival until sunset. We made amends as far as our circumstances would permit, and presented him with some tobacco, ammunition, etc., as a remuneration for his trouble in assisting us over. He was perfectly satisfied, and appeared highly pleased with the presents.

We found in this village a Canadian by the name of Jussaume,† who accompanied Captains Lewis and Clarke to Washington on their return from their voyage of discoveries to the Pacific Ocean as interpreter to the Mandan chief, Le Gros Blanc. This man has been a resident among the Indians for upwards of fifteen years. He speaks their language tolerably well, has a wife and family who live and dress in the same manner as the natives. As for himself, he still retains the outward appearance of a Christian, and his principles as far as I could observe, are much worse than those of a Mandane. He is possessed of every superstition natural to these people, nor is he different in performing every mean, dirty trick which they have acquired from their intercourse with a set of worthless scoundrels accustomed to visit these parts, some for the purpose of trade, and others, to save themselves from justice and the laws of their country, that would not fail to punish them for their numerous offenses."

EDWARD D. NEILL.

[TO BE CONTINUED.]

*Le Gros Blanc, or Big White, called by the Indians Shahaka was the first chief of this village and was recognized by Lewis and Clark and presented with a medal. Ohheenaw, Le Grant, or Big Man was much esteemed in the tribe. He was a Cheyenne taken prisoner, and then adopted by the Mandans.

† In the narrative of Lewis and Clarke his name is spelled Jesseaume, and on the 27th of October, 1805, was engaged as interpreter, and with the expedition went to the Pacific Ocean, accompanied by his Indian wife and babe. On the 16th of August, 1806, soon after Henry's departure, Lewis and Clarke returned to the Mandan village, and Le Gros Black, Big White, with his wife and son and Jessaume, the next day accompanied the military expedition to St. Louis, and from thence they went to Washington and were presented to President Jefferson.

EMBLEMATIC MOUNDS.

BIRD EFFIGIES.

The study of bird effigies is one of great interest. It brings us into the haunts of nature, and presents to us a very interesting class of works. These effigies are close imitations of nature, and are often excellent works of art. They have also great significance, and should be studied with this point in view.

There are four questions which arise in connection with the study of birds. 1st. Their shapes and attitudes. 2d. Their habits and haunts. 3d. Their character, disposition and spirit or nature. 4th. The proper method of classifying them. These questions are interesting in connection with the bird effigies, for they bring up the question whether there is any correspondence in the effigies to the birds, in these particulars. In reference to this we are free to say that bird life is very plainly exhibited. It would seem that the builders of the mounds were well acquainted with the habits and peculiarities of the birds and other animals, and that they had great skill in exhibiting those habits in the mounds. We do not say that the mound builders were confined to this imitative purpose, for there seems to be in many of the effigies a secondary purpose, as if a religious motive ruled in the erection of them, but if any such motive did obtain, it is evident that it only intensified their imitative art, and carried their skill from the depicting of the shapes of the birds into a subtle representation of the spirit and real character of the birds. It is singular how skillful they were in representing the attitudes of the birds. This skill was exercised upon mere heaps of earth, but they had the faculty of moulding them into such a shape as to tell a story which any attentive observer may read.

I. *The Shapes and Attitudes of the Birds.* These are represented by the effigies, and enable us to distinguish the birds from all other creatures. It is important that we study the shapes and attitudes, for many mistakes have been made for the want of a proper understanding of them. We have seen that there are several classes of effigies, and that the distinguishing features of the animals are represented by the mounds, two projections upon one side of a central figure being always indicative of the land animals, the two projections upon two sides of a central figure being indicative of the amphibious creatures. We are to notice that the birds are distinguished by a single projection upon each side of a central figure, and that birds are uniformly represented in this way. A fourth class of effigies may be distinguished by having a single projection on one side; this class represents not animals, but implements, such as battle axes

and war clubs. A fifth class is distinguished by having no projection whatever. These are the fishes and reptiles which are known to have neither legs nor wings. We have already called attention to these distinguishing marks, but so many mistakes have been made that we need to be careful in our analysis of the effigies. (1) We therefore call attention again to the four classes of effigies.

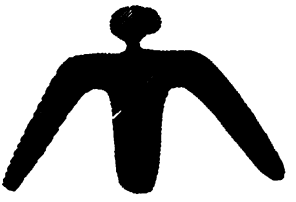

Fig. 41. Fig. 42.

The elk, the bird, the turtle, the fish, and war club, are here placed side by side. (See figs. 41-42-43-44-45.) The elk is taken from a group at Honey Creek. The bird from a group on the Wisconsin River. The fish and the war club from a group at Mayville. It is noticeable that many of the groups have all four classes of animals associated. This group at Mayville has three land animals, the coon, panther, and wolf, one

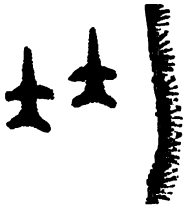

Fig. 43.

Fig. 44.

bird effigy, one fish, and one implement, the war club, but no amphibious creature represented. At Lake Koshkonong, there are, however, several groups which contain all of the classes or animals in close proximity. Here in one group may be seen the panther, the turtle and the fish, no bird. In another group may be seen the panther, the turtle, the duck and the fish,

Fig. 45.

but no war club. In another, a lizard, muskrat and turtle represent the second class, the eagle, hawk, bittern, the third class, the fish, the fourth, but no land animal and

no implement. (See figs. 10 and 15, Vol. VI, No. 1, Diagram 3, page 186.) In the mounds at Lake Monona, the bear, turtle, bird, fish and craw fish and war club, are in one group. In another there are turtles, birds of different kinds, fishes, but no land animals and no implements. At Lake Horicon there are foxes, squirrels and wolves to represent land animals, turtles to represent the amphibious creatures, wild geese and ducks to represent birds, and fishes to represent water animals, war clubs and composit mounds. There is a locality which has been described by Dr. Lapham, where a large number of ridges are placed in such a shape as to form a square inclosure. Here the only effigy is a war club, several shapes and kinds, however, being seen. On the Milwaukee River lays a group where the turtle, the wild goose, the crane, a serpent and a war club are all associated, but no land animals present. (See Lapham's antiquities, Plate X.)

At Pewaukee there are ten turtles and only one land animal, and that in an excavation or intaglio effigy rather than in an elevated mound. At Indian Prairie there are four intaglio panthers and two birds, but no turtles, fishes or war clubs. At Honey Creek there are birds and buffalo. At Lake Winnebago there are coons and squirrels, turtles, eagles, war clubs and fishes, but no composit mounds. At Great Bend there are panthers and turtles and birds, but no war clubs. Occasionally tadpoles and serpents are seen among the mounds.

(2) It is noticeable that in the effigies of birds the wings are distinctive of the genus or order, but that the bodies or beaks are distinctive of the species. The birds are recognized by the wings, but are distinguished from one another by other parts of the body. There are a few effigies of birds where the wings are not represented, the shape of the body and bill being the only indication that a bird was intended. The most noticeable effigy is that of the woodcock at Lake Koshkonong. (See Diagram 3.) This is an exceptional case. If the reader will take the pains to look over the diagrams, he will notice how uniform the representations of the birds are. It seems as though this method of portraying them had become conventional.

(3) We next call attention to the different attitudes of the birds. Four shapes may be recognized in the effigies, (first) where the wing is in a straight line forming a long ridge at right angles to the body; (second) where the wings are partially bent, the ridge frequently being of great length, but bent at such points as to properly represent the proportions of the wings; (third) where the wings are bent at right angles; a (fourth) shape is where the wings are curved like a scythe. Here the proportions are also observed, the length of the wing compared with the body being indicative of the species. It is a question whether the

species can always be recognized by the wings alone, but there are many cases where the wings make that attitude of the bird. The eagle has generally three attitudes; one where the wings are extended in a straight line; the other where the wings are partially bent; and the third where the wings are at right angles. Eagles are generally recognized by the wings as well as the beak, as the attitudes are represented in a very lifelike manner. The hawk belongs to the same order and resembles the eagle. It is, however, oftener represented with the wings bent, and may be recognized by the angular shape of the effigy. The difference between the hawks and eagles may be seen by comparing the figures. The hawk has frequently a forked tail, but the eagle never has. A good illustration of the shape of the wings may be seen in a group at Lake Monona.

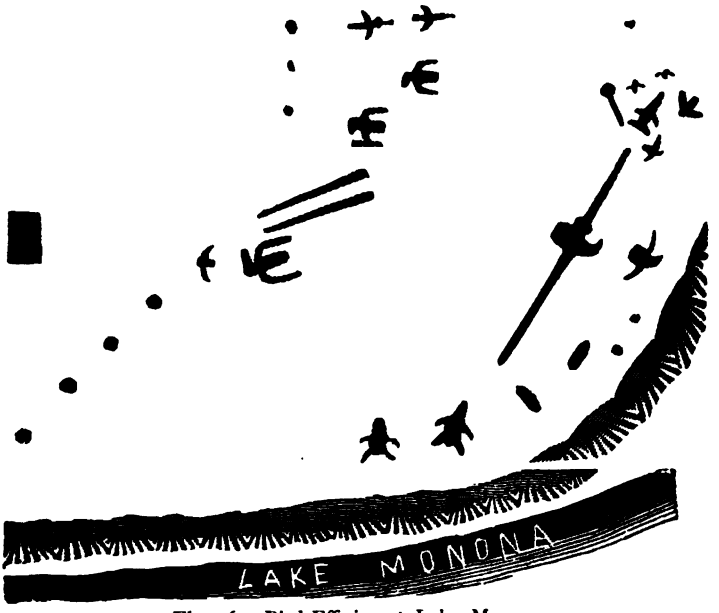

Fig. 46. Bird Effigies at Lake Monona.

The eagle is here represented as having its wings extended, the hawks have their wings bent at right angles; the wild geese have their wings curved; the pigeons have their wings oblique to the body, and one figure has one wing protruding forward. The figure illustrates not only the different attitudes of the birds, but also how the birds differ from one another in their shapes. Some of the same birds are represented on a large scale in the figures which follow, and from these their shapes may also be studied.

(4) The distinguishing marks of the effigies which represent the species of the birds will next be given. These are seen in the beaks and bodies. We shall illustrate this point by figures, taking some of the illustrations from the groups already described but representing the birds as detached from the groups. We shall also mention the individual species, and call attention to the shapes of the effigies as portraying the species. We shall not undertake to describe all of the species, but take the more prominent kinds as typical. The wild goose is the first which we shall notice Wild geese are frequently represented in the effigies. We have seen effigies of them at Lake Monona, at Mayville, near Sauk Prairie, on the Wisconsin river, at Honey Creek, and many other localities. It is well known that the wild goose has a very long neck and a short body. Wild geese are always represented in this manner. A figure is given here representing a part of the group seen at Lake Horicon. Here the wild geese are associated with foxes and squirrels. (See Fig. 47.)

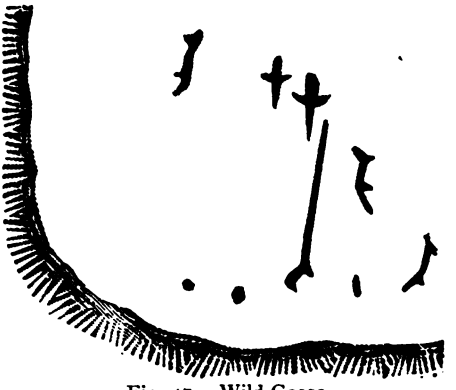

Fig. 47. Wild Goose.

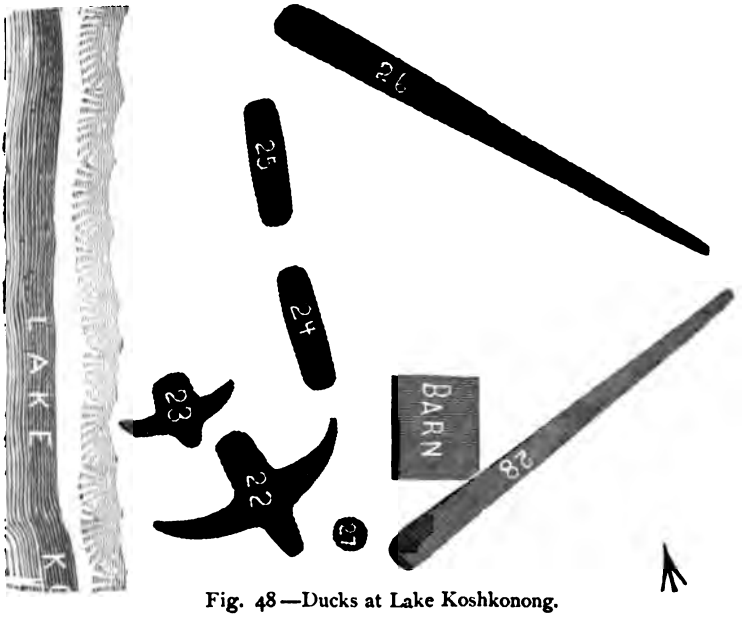

Fig. 48—Ducks at Lake Koshkonong.

The Duck — It is well known that the duck, on the other hand, has a short neck and a thick, strong wing. A figure is given to illustrate. (See Fig. 48.) This represents a group at Lake Koshkonong. There are in one group two birds. These have short, curved wings, sharp beaks and round, plump bodies, probably intended to represent different kinds of ducks, the mallard and blue duck, birds which are common in this region at the present time.* These two birds are attended by long, tapering mounds, which were intended for fishes, though the shape of the fish is lacking.

The Swallow is a bird distinguished for having peculiarly sharp wings. This swallow is seen at Lake Koshkonong, associated with a group with two pigeons and a turtle.

The swallow resembles the night-hawk, and we are in this case at a loss to say whether it is the swallow or night-hawk which is here represented.

The Owl is a bird which is easily recognized by it horns. The effigy of a horned owl was seen by Mr. S. Taylor, in Grant county, Sec. 16, T. 8, R. 1, W. The owl has a large, thick body, short bill, and is peculiarly heavy across the shoulders. The effigies all have these characteristics. (See Fig. 49.)

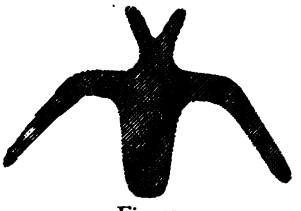

Fig. 49.

The Prairie Hen is also frequently represented in effigy; this is common on the prairies and the effigy of it is oftener seen near prairies than anywhere else. One such effigy may be seen at Waukesha. It is called by Dr. Lapham the cross. Several effigies of prairie chickens may be seen at Crawfordsville. Here the effigy is associated with panthers and turtles, but is called by Dr. Lapham, the dragon. In both cases the bird is seen in the attitude of flight, its wings extended in a straight line, an attitude which is very common with the prairie chicken. The wings are wide the body thick, the tail round and the head short.

Fig. 50.

The Pigeon is frequently represented in effigy. This bird has a pointed tail and is represented with wings at right angles or partially extended, and is easily recognized by the shape and attitude. Several pigeons have been described by Dr. Lapham, as situated at Maus Mills on the Lemonwier river.

The Hawk is a bird which has marked characteristics, but always has in the effigies a sharp bill, a flat head, long, pointed wings and may be easily distinguished fromall other birds except the eagle. The eagle belongs to the same family in order

*See Fig. 15, first paper.

and as a result the two effigies are more likely to be confounded. We give a figure representing hawk effigies, (See Fig. 57,) taken from the group at Honey Creek. The hawks were there associated with buffaloes and are plainly recognized in the group. There are many other effigies of birds but we have not space to describe them all.

The proportion between the wings and body is generally indicative of the species. It is remarkable how accurately the proportions were observed. It would seem almost as if measurements had been made, and that effigies were erected from a scale of inches. Occasionally, however, the wings and bodies are erected disproportionately. This, however, was for a purpose. There are localities where the wings of birds serve for defense, and in such places the wings were extended in order to protect the greater area. One such case may be seen in Mills Woods. See Fig. 46. Here one of the wings of the bird are stretched out nearly 600 feet. At Muscoda, there is a bird effigy which extends over 1,000 feet. In many other localities the same features may be observed.

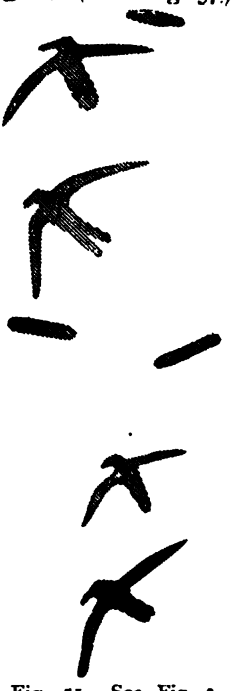

Fig. 51. See Fig. 3, page 10; also LAPHAM'S Antiq., Plate II.

(5.) We are to consider one more point. We refer now to the bird effigies, which have been mistaken for crosses, dragons and man mounds.

We have been particular in giving the peculiarities of the birds because no class of effigies has been so misinterpreted as this. The opinion seems to prevail that there are effigies of crosses, dragons, bows and arrows and other figures, which are peculiar to both civilized and uncivilized races. It does not seem probable that the cross would be represented among the animal effigies of Wisconsin, but all the writers upon Emblematic Mounds have spoken of crosses in great numbers, and the mistake seems to be repeated continually. A writer who has just prepared some articles on prehistoric man, has kept up the delusion, and speaks of the crosses and dragons. We maintain that in every case where these writers have recognized the cross is where the bird is the effigy intended. We call special attention to this point. It seems singular that such mistakes should have been made, but it is owing to the fact that the shapes of the effigies were not analyzed and compared with the shapes of the birds with sufficient care. If we observe the peculiarities

of the birds in studying the effigies we shall be saved many mistakes.

(1) *The Cross.*—Dr. Lapham, in his work which we have so often quoted, has represented that there were crosses and dragons and many human effigies among the emblematic mounds. It is noticeable that nearly every cross which he has described may be, when studied according to this rule, identified as a bird. The same is true of the so-called dragons, and even in most of the specimens of human effigies; for these, when resolved into their proper elements and analyzed carefully, have all proved to be birds. Perhaps it should be said that the wings of birds do have some resemblance to the arms of a cross, and occasionally the dragons and birds have resemblances to the upright parts, but the variations are very great. This, however, reveals to us the reason why Dr. Lapham has given such a variety to his so-called crosses, and why he has called some of the effigies crosses and some dragons. It appears that there are scarcely two crosses alike. Sometimes they are represented with long upright bars and sometimes short standards. The cross bar is sometimes straight and sometimes curved; again it is placed at an oblique angle, and at times exceeds in length the standard.

Ther eare so-called crosses which have large full heads and a long tapering foot; sometimes the head and foot and the cross bars and the arms are of equal length, axd in fact in nearly every shape.

Fig. 52. Crosses on the Milwaukee River.

The first place where Dr. Lapham thought he recognized the cross, was near the Milwaukee river. Here are two effigies of birds, probably wild geese. They are situated on the summit of a hill, and are associated with a number of intaglio effigies representing panthers. The group was intended, in our opinion, to represent the animals which were common in the vicinity, and no idea of the cross ever entered the head of the builders of the effigies. The use of the intaglios or excavated effigies was probably as a hiding place for hunters. The high mound was used as an observatory and the bird effigies either as screens or as outlooks. The locality was formerly surrounded by a dense forest and the birds and beasts represented were such as were common among the forests.

A second locality where birds have been taken for crosses was also near the Milwaukee river. (See Fig. 53.) Mr. L. L. Sweet has surveyed the group, and says, "The largest cruciform fignre is 185 feet in length of trunk, the head 24 feet long; the arms 72 feet each; the height at the head, three feet 10 inches; at the center, 4 feet 6 inches. The shaft gradually diminishes to a point at the end; the appearance is that of a cross sunk in light earth in which the extremity is still buried beneath the surface. Two round mounds near the foot of this cross are each three feet high, and 20 and 22 feet in diameter. A third effigy was discovered by Dr. Lapham, near Ft. Atkinson, closely associated with an intaglio effigy, and is compared to others situated at Waukesha and Crawfordsville. In this case, however, the bird represented resembles the prairie chicken, as the body is short and thick, and the arms much longer than the body. (See Fig. 50.) Another effigy (bird or cross), 52 feet in length of body, and 117 feet in extent of wings, was seen by Dr. Lapham, near Jefferson. The cross at Merton, Dr. Lapham says has the following dimensions, the length of each arm (or wing), 160 feet; length of the head, (upper part) (body), 51 feet, foot (neck), 175 feet and at the lower part an expansion. The author does not say what this expansion is intended for. The fifth cross is one with oblique arms. It was described by Dr. Lapham as situated near Fox Lake. He says, "On the west side of the stream is an extensive group, containing a "cross," oblong and circular mounds, one of the bird form, and two that were perhaps intended to represent the elk. Among the figures was a "cross," the arms of which were *oblique*, and one effigy forming a tangent to the cross, its outline resembling a war club." This group has now disappeared, but judging from the figure we should call the cross a bird and the "elks" rabbits.

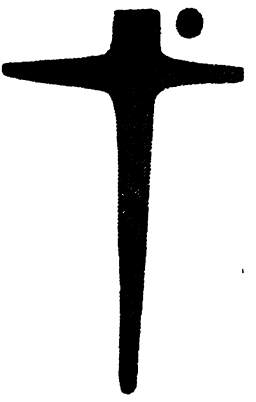

Fig. 53.

"There are sixteen mounds in cruciform variety at Horicon. They are not placed in any uniform direction, some having their heads turned toward the north and some toward the south. The form seen is exactly the same as that seen on the Milwaukee river. Of the mounds found in this locality, Dr. Lapham says, they are the most extended and varied groups of ancient works, and the most complicated and intricate. They occupy the high bank of the river on both sides. Immediately above, the river expands into

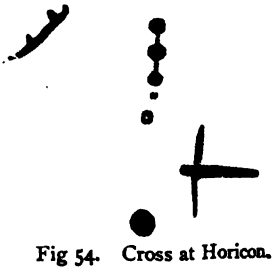

Fig 54. Cross at Horicon.

a broad and shallow lake, extending twelve miles with a breadth of five miles. Immense numbers of fish and water fowls are to be found there. One of the crosses has the arms extended quite athwart the top of the ridge which is here flanked by the river and on the other side by an extensive marsh; near this cross are two large mounds twelve feet high and sixty-five feet in diameter. Near the cross which is given in figure 54, is a large conical mound and long mound, which regularly tapers for the distance of five hundred and seventy feet. This mound runs parallel with the line of the bluff; the cross is at right angles. The location of the crosses near this lake and near the effigies of foxes, squirrels and turtles, would lead to the opinion that the effigies were those of wild geese and not intended for crosses. At this place there are two composit mounds, one of them on the east side of the river and one on the west side. The composit mounds are the central objects in both groups; the whole arrangement of the effigies, burial mounds and composit mounds, would indicate that the locality was used as a village site, and that the effigies were placed on the edge of the bluff for the purpose of defense The cross has no significance in such a locality, but the wild goose has. Another locality, supposed by Dr. Lapham to contain crosses is in the vicinity of Mayville; one group comprises thirty-five mounds in various forms, and occupies a nearly level strip between the base of a large ridge and brook. "We found here," Dr. Lapham says, "one of the largest and most regular turtle mounds three or four quadrupeds. The two crosses are directed toward the northeast, while the most of the other forms are in an opposite direction. Their arms are seldom at right angles with the body, nor are the two parts of the body or trunk in the same line; the head is always largest, highest, and rectangular in form." Dr. Lapham also says: "If these crosses are to be deemed evidence of the former existence of christianity on this continent, as some have inferred, we may with almost equal propriety assert that Mohamedanism was associated with it, and as proof refer to the mound or ridge here presented in the form of a cresent." We suggest that the mound called a cresent was the effigy of a duck, and that the mound called a cross was the effigy of a wild goose, for the description corresponds better with the ordinary effigies of that bird as seen in other localities. Another cross, "as usual, with a direction opposite to that of other figures," is described as situated a little south of Mayville, on Section 26, "Here is a group of three mounds, of which the central one is doubtless intended to represent the trunk and arms of the human body." Here the author has mistaken the effigy of a pigeon whose head is so short as to be hardly visible for that of a headless man and the effigy of a wild goose for a cross, but recognizes the fourth figure as the effigy of an animal.

The absurdity of such comparisons is too plain to be refuted. "At Lake Winnebago," Dr. Lapham says "is a 'cross,' sometimes 'called a man,' but it wants the legs and the contraction of the neck seen in the mounds of human form."

[2.] *The Man Mounds.*—There are many human effigies among the mounds, but, many of the so-called man mounds are nothing more or less than bird effigies. We propose to review Dr. Lapham's list of man mounds to show that in nearly every case he has mistaken a bird effigy and called it a man. The two effigies just referred to, are cases in point. There are other bird effigies which have some resemblance to the human figure; two such birds may be seen on the brow of the bluff near Honey Creek Mills. They are hawks rather than human effigies. See figure.

"The human figure with its gigantic mounds having a stretch of 288 feet," also described by Dr. Lapham as situated in Town 8, Range 4, is but a bird effigy. This figure stands by itself in a valley or pass between two of the high sandstone bluffs, one of which rises immediately above the head. From the site of this remarkable and lonely structure, the road leaves the valley of the Wisconsin. The figure here represented as the man mound has a head which bears a slight resemblance to the human head, but has no legs, the only point of resemblance to the human effigy is in the arms, which are said to extend to a prodigious length.* It is evident that the effigy is a bird placed in the pass as a guard for protection as the bird effigies at Honey Creek Mills are placed on the summit of a bluff to protect a similar pass.

Another human effigy, though very deficient in the proportional length of the arms and legs, is depicted on the same plate with the above. There is said to be a companion mound similar to it, and the two are supposed to represent a male and female. These figures have no resemblance to human effigies. Dr. Lapham says: "It is to be observed that the difference between the mounds evidently birds, and those resembling the human form is but slight, so that it is sometimes not easy to decide which was meant by the ancient artists." The distinction between bird effigies and man mounds may be traced, if it is remembered, that the proportions between the arms and legs and body of the human being are generally closely observed in the man mounds. The arms are also blunt at the end, the head is generally well formed.

[3] *The Bow and Arrow*—There are effigies which have been taken for figures of the bow and arrow. One such is described by Dr. Lapham as situated on the Kickapoo river. It is a part of the group already described as a game drive, and forms the

* See page 68, plate XLII; also XLII, No. 2.

end of the drive, which is nearest the pass in the bluff. It is attended by long mounds, which run parallel to it. See Fig. 55. The so-called bow forms a right angle with the other mounds, the arrow running parallel with them. In our opinion, it represents the crane rather than the bow and arrow. The crane has an extremely long neck, a small body, and very long, crooked wings. The writer has seen effigies of the crane at Lake Monona and Lake Koshkonong. In one case he saw the effigy of the crane and during the same day the live bird. It was a striking coincidence, and the resemblance between the effigy and the bird was noticed at once. The recurved shape of the wings of this bird makes it resemble a bow. The long, tapering form of the neck of the bird gives it a resemblance to the arrow. The whooping crane has a neck similar to this, and when in flight has wings which are curved in the same manner. The effigy was intended in our opinion, to represent the crane, though there is some plausibility in the idea that it represented the bow and arrow. An effigy similar to this has been seen by the writer, on the bank of Lake Monona, near the Shooting Park.

Fig. 55. Bow and Arrow.

[4.] *The spear or arrow point.* An effigy of a bird formerly existed near Prairie du Chien. [Sec. 4, T. 8, R. 4 E.] This is regarded by Dr. Lapham as a barbed spear or arrow point. It is, however, a bird effigy intended to represent the night-hawk. The wings and tail are both pointed, but the body and wing feathers are wedge shaped as is the case with some kinds of birds. It is the only case where any effigy resembling a spear head has been seen.

II. The second point to which we would call attention is as to the manner of representing the *habits* of the birds. 1. It appears that the builders of the mounds intended to represent the birds as in motion in the air. This is seen, not only in the shapes and attitudes of the effigies, but in an indefinable air which they carry with them. We have already stated that all of the animals are classified according to the elements in which they live, the representation of them in the mounds being such that the classes can be easily distinguished. It must be remembered, however, that the land animals and the amphibious creatures are represented as having feet, their feet and legs

being in the case of the land animals upon one side of the body and the others upon two sides. The birds' feet are never visible in the mounds, the wings being the only distinctive mark. It seems strange that the wings could express the flight of the birds so well, for the earth is a poor material in which to depict so frail and so finely wrought a feature as the feathers of a bird. It will be noticed, however, that the outlined and general shapes of the wings are given with great truthfulness. An illustration of the skill of the mound builders may be seen in the celebrated eagle at Waukesha. See Fig. 56. Here the imitative skill of the artist

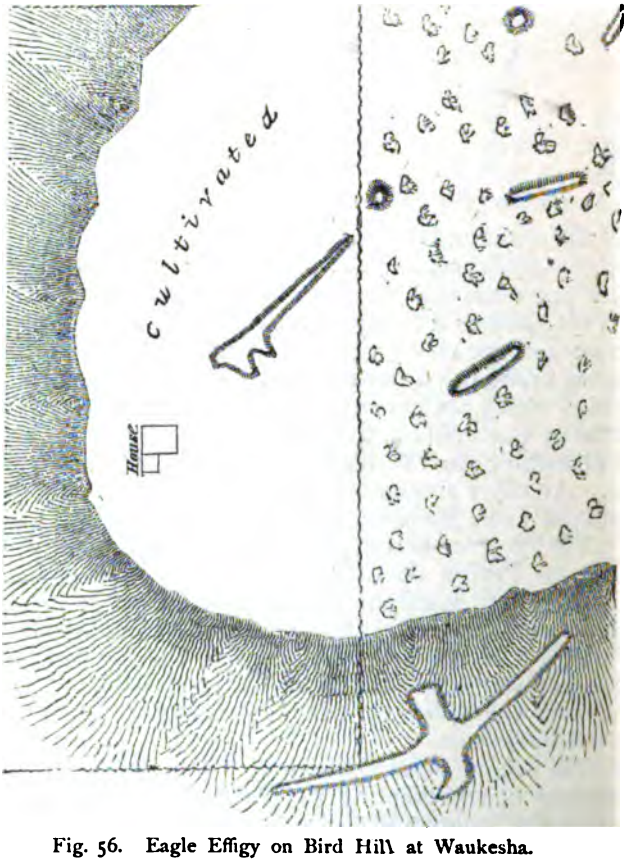

Fig. 56. Eagle Effigy on Bird Hill at Waukesha.

is beautifully shown. The attitude is interesting as it is the one which is natural to the eagle, and shows the shape of the animal while in motion. The eagle is evidently flying or soaring in the air, but is at a great height as the wings are stretched out in a straight line, and the whole attitude expressive of flight. The effigy also conveys the idea that the eagle is taking an outlook while preserving its flight as the shape and position of the

head is suggestive of this. The bird seems to be in an isolated position. It is situated on the side of a hill and seems to be guarding a group of effigies consisting of the wolf and several conical mounds. It is, however, the only bird effigy in the group. The eagle is a bird which is distinguished for its lofty flight and for its extensive vision, and here both these peculiarities are shown.

This peculiarity of the birds may be recognized not only in the eagle, but in all of the birds. All seem to be in flight and the particular method of flight is exhibited by the mounds. There are birds which have a very rapid motion. Such birds are represented and the motion peculiar to them exhibited by the mounds. Other birds have several different styles in flying; they soar high above the earth; they dart rapidly through the air; they roll and tumble in their flight; they drop upon their prey; they arise from their perch, or spring from the water, and seem to vary their attitude with every changing motive. These are generally birds of prey. It is remarkable how many attitudes of the birds of prey are represented in the mounds. Any one who will examine the effigies and notice the different attitudes in which the birds are figured will realize this. There are many small birds which are seen among the effigies. Such birds are oftener represented as rolling and tossing, the peculiar twist and turn of the wing being exhibited by the shape of the mound. The distortion of a bird effigy becomes at times very expressive on this account, as the distortion represents the motion and attitude of the bird. We call attention to a small bird which was surveyed by Mr. Wm. H. Canfield, and which is figured by Dr. Lapham *. Here the bird is so contorted that every part of the effigy has a separate measure and a shape peculiar to itself. One wing raised, and the other dropped at an angle, the head is thrown back, the tail is twisted, and the whole figure thrown into shape as if tumbling or rolling in the air rather than flying. Other birds are seen in attitudes as of darting rapidly, but this is peculiar in its attitude.

2. The gregarious habits of the birds are represented in the effigies. The reader has only to look over the figures to see how often the birds are thus represented. In these figures the hawks are in flocks, sometimes four effigies of them being seen in one group. The ducks are also in flocks, and the peculiar social habits of the birds are shown by the effigies, the ducks being in close proximity. The wild geese are in flocks also, but they pursue their flight either in a line following one another at considerable distances or nearly abreast of one another, but forming the peculiar shape of the drag or letter A. The pigeons are

* See Lapham's Antiquities. Plate XLVIII.

also frequently represented in flocks, but they pursue their flight in a pell-mell method, sometimes following one another, sometimes abreast and sometimes huddled closely together. The different birds are represented as associated together, but when the attitude is given they are driving or pouncing on one another, or driving and being driven. One needs only to look over the figures already given to see how often the birds are thus represented. We give a cut (Fig. 57) to illustrate the gregarious habits of the birds. It is taken from Squier and Davis*. This group was first described by Mr. S. Taylor. It was situated in the village of Muscoda, but has been obliterated by the growth of the village. We quote the language of the author named. "In the group are three figures in the form of a cross (bird:); in the center of the largest of them is a depression caused by an Indian cache." "The distance from one end of this group to the other, is about four hundred and sixty yards. The length across the effigies is about two hundred feet." The birds here are of different kinds, a hawk and two birds which are difficult to identify, possibly pigeons. The hawk has an erect atitude white the other birds are in flight.

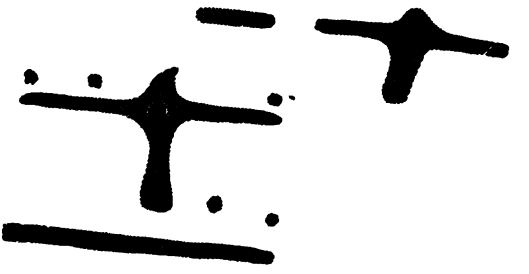

Fig. 57.—Hawks at Muscoda.

3. The habits of the birds as birds of prey and peaceable birds are also portrayed by the effigies. It is well known that the songsters are generally peaceable in their habits. The songsters are, however, so small that they are not often recognized in the effigies. The birds which are most easily recognized are the birds of prey. These are the hawks, eagles, owls and falcons. It is remarkable that the birds of prey are often associated with other animals which prowl after their victims and prey upon the living creatures about them, the eagles and hawks being associated with foxes and wolves, while the peaceable birds are associated with peaceable animals, ducks and cranes with turtles and lizards, ets. One group of mounds strikingly illustrates this point. It is a group which was evidently used as a game drive. In this the eagles and hawks are associated with foxes, and are evidently hovering near a drove of elk, both waiting for their prey, the foxes in the attitude of prowling and the birds soaring in the air.

* See Smithsonian — Contributions. Plate 43, No. 1.

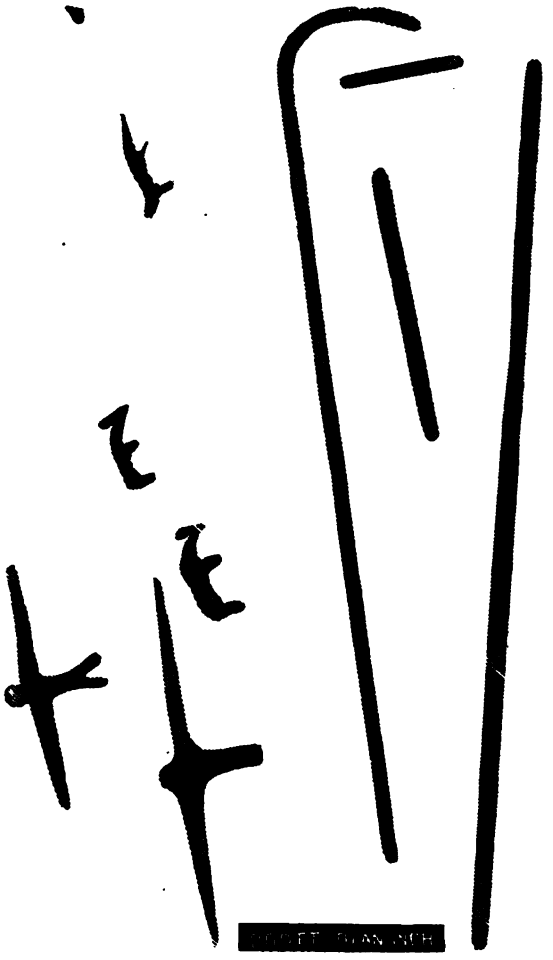

Fig. 58. Birds of prey near a game drive, at Honey Creek — LAPHAM.

We give a figure to illustrate this point (Fig. 58). It represents a group which was surveyed by Dr. I. A. Lapham. It is situated on section 18–19, T. 9., R. 6. E., near Honey Creek Mills. The group is in a valley, between several high bluffs, and is in just such a position as would be best suited for a game drive. The elk was probably the game which was abundant in the region. These bird effigies are associated with the figure of a crane, the crane forming a portion of the game drive. The birds may be recognized by their shapes, the hawk having a forked tail, the eagle having a square tail and short neck, but the crane having a very small body, a long neck and curved wings. These effigies have been misinterpreted by Dr. Lapham, for the hawk is said to represent a human effigy and the crane a bow and arrow. The same idea of hawks, eagles and other birds of prey being associated with game drives may be seen in the group on Kickapoo river.* Here is a small herd of buffaloes. The buffaloes seem to be feeding, but the hawks are hovering near as if looking for prey among the drove.

* See American Antiquarian. Vol. VI, No. 1, Fig. 3.

4. The habits of the birds, as prairie birds, water birds, and forest birds, are also depicted. This peculiarity is, however, shown by the effigies. It is well known that ducks and wild geese prevail among the lakes of Wisconsin. A group of effigies may be seen near Lake Wingra, overlooking the marsh and lake. There is in the group a wild goose and a duck in close proximity, both flying toward the water, and a long, tapering mound close by which may represent the fish. The habit of these birds is to feed in the marshes. The effigies studied in connection with the locality give this idea. There are several other effigies in the group, such as an eagle and a swallow, and two land animals, all of them arranged on the side hill, parallel with the water, giving the idea that they were placed there as screens for hunters who were watching for geese and ducks which frequented the lake. (See Fig. 12, first paper.)

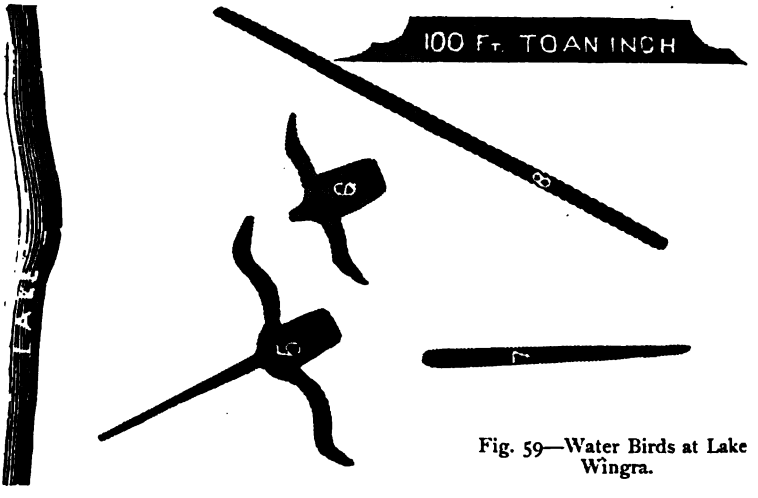

Fig. 59—Water Birds at Lake Wingra.

5. The habits of the birds as conquering and conquered are sometimes depicted by the effigies. In the group at Muscoda, already given, we have the hawk represented as a conqueror over the pigeon. (See Fig. 57.)

In a group at Koshkonong the duck is chasing the swallow, and in other groups hawks and eagles are represented in attitudes as if they were chasing other birds, and still other groups, bitterns and cranes and hawks are in flight, but the habits of the birds may be recognized in nearly all the groups, and the effigies become very interesting on this account. We have already referred to the association of birds with animals having the same character. This is significant, for the habits of the animals seem to correspond, the beasts of prey being associated with birds of prey; the conquering animals, such as the panther, being associated with the conquering birds; the water animals be-

ing associated with water birds (ducks and wild geese), the forest animals (wolves and wild cats), with the forest birds (pigeons and hawks), the prairie animals (deer and buffalo), with the prairie birds.

The habits of the birds are better represented in the effigies than in the cuts, for the effigies seem to have been erected with great care, and the more one studies the shapes, the more does their meaning come forth. If there is a double meaning, this never interferes with that which is perfectly natural. The symbolic is hidden underneath an imitative shape. The great skill was exercised in portraying the attitudes of the birds. No ordinary person could take the heaps of the earth and mould them into shape, so that the effigies could be understood, but here the very character of the birds is exhibited in the shape, so that we read the disposition, the habits, and even the particular intent of the bird pictured before us. It is most remarkable that the attitudes should be so expressive, but when studied attentively they grow in significance.

III. The use, intent or significance of the bird effigies.

We have given the description of the different birds and their shapes and attitudes, and have seen that they were closely imitated by the effigies. There seems to be, however, in many of the bird effigies something more than a mere imitation of birds.

1. In the first place the effigies are so extensive that we must suppose that they had some use. A great amount of labor was expended upon these objects. It seems hardly reasonable, that so much labor would be laid out upon mere objects of fancy. The size of the effigies is worthy of notice. There are bird effigies which reach to the prodigious length of 600, 800 and even 1000 feet. Some of these are associated with artificial ridges, tapering mounds and other animal effigies in groups which cover many acres of ground.

2. *Composit Mounds.* The idea that effigies are sometimes used with a double significance is shown by a unique class of mounds called composit mounds. These are apparently pictographs.

Several composit figures have been described. One was situated on the north bank of the Wisconsin river, and is called by Mr. S. Taylor the "citadel." It is composed of two effigies of birds, one of a buffalo, and three nondescript figures, the effigies forming a sort of fragmentary wall around several conical mounds, making an inclosure of about half an acre in area. The whole group is situated upon prominent ground, and may have been intended as an altar or sacrificial place, as the whole group gives the idea of sacredness as if the effigies were intended to guard the place of worship.

The association of bird effigies with composit mounds may be

seen also at Lake Horicon on either side of the river; in one the wild goose is in close proximity, in the other there is the figure of a battle ax and several bird effigies, while in the centre of the group is the composit mound, consisting of a nondescript figure, an inclosure containing a single mound being formed by the various portions of the group. It is not always the case that the inclosures contain burial mounds or altars, for the triangular inclosure which may be seen at Lake Koshkonong has no mound within it. The birds are placed at one side and the fishes form walls on two other sides, but some other purpose than a sacrificial one was the intent of this group.

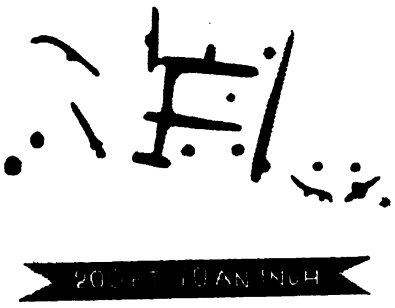

Fig. 60. Composite Mound at Horicon.

The figure of a composit mound is given herewith. It was discribed by Me. S. Taylor.* It seems to be a combination of two figures, "one representing the buffalo, perhaps, and the other a man" (more likely an eagle). Immediately to the southwest and within 20 feet of this figure commences a series of mounds, mostly conical.

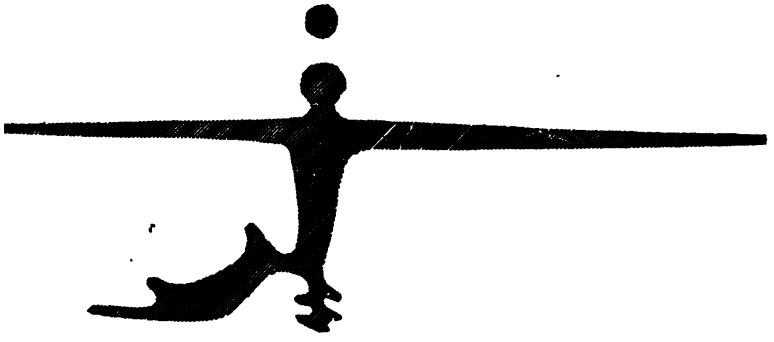

Fig. 61. Composit Mounds.

3. There are certain bird effigies which have evidence of a secondary or symbolic significance. Such an effigy was discovered by Mr. Canfield at Sauk Prairie. It had a mound near the body and under the wing. The bird is represented in the act of flying. The remark of Mr. Canfield is that it may be a messenger bird carrying something suspended from its beak indicating the little mound placed below its wing. The mound is

* See Smithsonian Centributions.—Plate LIV, Page 133.

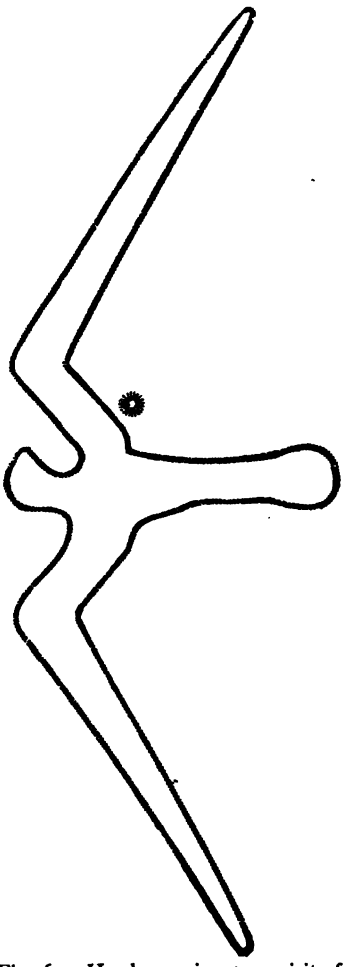

Fig. 62. Hawk carrying the spirit of the dead.

small, seven feet in diameter and less than a foot in height. Illustrations of this point are given by certain inscriptions.

Dr. Lapham says perhaps the purpose is to represent the bird as bearing to the spirit-land, some person whose remains were deposited in the mound. Such effigies of birds attended with conical mounds near the wing are quite common. Three such effigies may be seen among the so-called crosses. A bird effigy similar to this, but having the wings extended at great length, may be seen on the banks of Lake Koshkonong. Here the bird's wings forms with other effigies a long line or wall, a row of burial mounds in the rear of them forming another or a double line of mounds. The mound placed under the left as if protected by the bird, is, however, a large one, and may have been intended to cover an altar or a burial place. There is no doubt that a double significance was given to the effigies of this class. The attitude is a natural one, but the wings seem to protect them from the burial or altar mound, as if the bird was forming over it— possibly forming the spirit with it.

4. Illustrations of this point are given by certain inscriptions. An inscribed figure from West Salem, represents a bird as springing out from the cresent of the moon. This figure is probably modern, the work of the later Indians. It shows, however, that there was a meaning in the figures. In this case the effigy was designed to represent the thunder bird. The difference in representing the birds by inscriptions, and by effigies, will be noticed. In the mounds there are no legs attached to the bird effigies. In the inscriptions the legs are both marked, even the claws and toes. The topknot is also portrayed, the mouth is open, a peculiarity which is seen in other members of the same pictograph. The

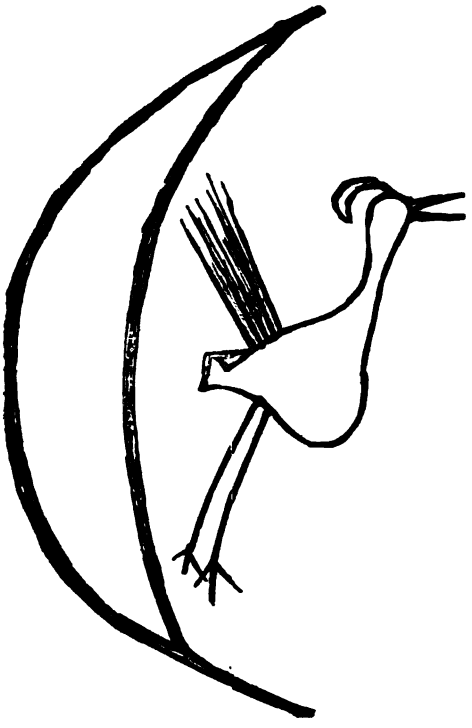

Fig. 63. Thunder Bird.

open mouth is evidently a sign of speech. The symbolic meaning of the bird is evident from all these peculiarities. No such representation of thunder birds have been seen in the effigies. If there are crescents in the mounds, they have not been recognized. The sign of speech is never perceptible among the effigies. There are, however, effigies of birds which seem to have a symbolic sigificance, and which inscriptions and traditions may assist us in understanding. The thunder bird was very common in North America. It appears in the totem posts of the north-west coast. It figures conspicuously in traditions, and is likely to have been symbolized in the mounds.

5. The evidence that the bird effigies were intended as guards to protect inclosures is given by many other groups. There are effigies of eagles where the wings are stretched out in a line to an unnatural length. The manifest intent being to make the wings serve as a wall. An illustration of this may be seen on the banks of Lake Monona in Mills' woods. Here may be seen ten or twelve effigies of birds, the effigies being arranged along the two sides of an irregular inclosure, one series of them on the edge of the bank, the other on the summit on the opposite side of the woods. Here one bird has wings extended for six hundred feet. The wings reaching from one group of turtles to another; the turtles being situated where they could serve as outlooks, but the wings of the eagle form with the effigies in front of it a double wall of defense. On the opposite side there are conical mounds, effigies of hawks, wild geese and two long tapering mounds, running parallel with one another, and apparently forming an entrance to the inclosure. The group forms a very interesting series of works as it gives rise to the idea that the effigies were used for different purposes. The eagles for protection, the turtles for lookouts, and the hawks also serving as

guards. It is noticeable that on one side of the enclosure the effigies are placed at the intervals between them and are overlapped by birds, so that there is a continuous wall; on the other side the intervals are left unprotected. The inclosure may have been intended for a game drive or for a village.

EDITORIAL.

MEASUREMENTS AMONG THE MOUNDS.

A pamphlet received from Col. Charles Whittlesey, refers to the measurements among the mounds and earthworks of Ohio. The essay, prepared by W. G. McGee, published in the AMERICAN ANTIQUARIAN, has treated of the same topic. The opinion of both of these gentlemen, is, that the cubit consisting of 25.7 English inches, was the standard or unit of measurement among the mound builders. It has often occurred to the editor that there was some standard, although he is not certain that the cubit was the one. The emblematic mounds have certainly proportions which indicate this. The effigies are generally sixty feet or multiples of that figure. There are effigies with tails 120 feet, 240 feet, a few 280 feet, one recently discovered, 360 feet. The heads, legs, bodies of the effigy, are generally fifteen, one quarter of sixty, or 20 feet, one-third of sixty, long, 10 feet wide, one-sixth of sixty.

In a few cases, there are odd measurements, fifty-seven for length, twenty-seven for width. This uniformity of measurement among the emblematic mounds is rather singular. It may have been owing to the fact that the pace was used, rather than to any standard of measurement.

It does not seem probable that either the rod, 16½ feet, or the cubit, 25.7 inches, was used, for these figures never prove a good divisor of the lengths or breadths of the effigies. The foot, 12 inches, has proved the most convenient standard, and we are of the opinion that some such unit was known to the builders of the mounds.

The pace, 3 feet, seldom fails to divide the measurements, for even the odd measurements, such as 12, 18, 57, are divided by 3, while 60, 120, 240, 280, 300, 360, are also evenly divided There are mounds which have the proportions of 150. The sothic circle gives us the number 60, the English foot, 12, the pace, 3. Either of these numbers are much better for measurement, than 25.716 inches, or 16½ feet.

MOUND EXPLORATIONS IN IOWA.

A clergyman, near Knoxville, Iowa, has written a few articles for the newspapers in reference to certain mounds in the vicinity and we find, that at least one important discovery was made. It consisted of the discovery of an arched or dome-like sheath over the mound; this sheath consisting of a sort of concrete or plaster, called water-proof cement, but having the appearance of burned clay or burned brick. This sheath was sixteen inches thick, covered with two feet of soil, and arose in the center or at the apex of the mound about seven feet. Beneath it were ashes or charcoal in a good state of preservation. A furnace was also found five feet below this arch; the furnace was two feet wide, four feet long. ten inches deep and filled with ashes and charcoal. The heat had been so intense in the furnace, that the inner surface of the walls are glazed, like the arches in a brick kiln. Each wall is one unbroken body, hard as metal, but very brittle, The top of the furnace had yielded to the weight above and was filled with debris, ashes and charcoal being the main material. In the center of the mound there was a piece of cement, and beneath this a crushed human skull. The dimensions of the arch were exactly twelve feet for the diameter, the height, such that a tall man could have stood erect under its center.

We are happy to publish these statements, although we have not received the facts from the gentlemen who were concerned in the discovery. The names of these gentlemen we give, for there were evidently some accurate measurements and much careful observations in their explorations. Mr. L. J. Kimberling contributes the facts, J. D. Evertt, M. J. Armsberry, Mr. Peffenbarger and Mr. Reynol, all of Polk County, Iowa assisted.

The same clergyman says that the mounds are found in groups of from five to ten in number, arranged in straight rows or in a circle. They are found occupying only the highest points of land, always near a bluff or cliff of rocks. In one case a raised way twenty rods in length, eight or ten feet wide, with perhaps one foot elevation above the surrounding surface, straight as an arrow, leading to one of these abrupt bluffs, for which this township is famous. The opinion of the writer is that there were caves in the side of the bluff, and that this raised way was designed as an approach to them.

DESTRUCTION OF MOUNDS.

We have received letters from a gentleman who has "explored" six hundred mounds. In corresponding with him and reading over the paragraphs which he has written, containing a

description of the mounds, not one single statement has been secured that has any archæological importance. He is called by the papers "An Eminent Scientist," but science seems nowadays to consist in slashing away at the mounds and destroying as many as possible. In our explorations we have found an immense amount of this foolish digging. There is scarcely a mound in Wisconsin that does not show traces of the "relic hunter." The work of delineating the effigies cannot be done too soon, for the shapes are disappearing. The Ethnological Bureau ought to survey these before any more destruction takes place. We hope that the point will be understood and appreciated.

THE PEABODY MUSEUM IN THE FIELD.

We are happy to call attention to the thorough work which Prof. F. W. Putnam and his coadjutors have been doing in certain localities in the Ohio valley, and to the conclusions which have been reached as a result.

The difference between a superficial, haphazard search for relics and this thorough exploration of a locality for the sake of information, is too plain to need any comment from us. If any one thinks that the prehistoric age is to be disclosed by picking out the earthworks which are likely to yield the best crop of relics, and then sending persons to dig rapidly for fear some one else will get the relics, he is welcome to the conceit, but that is not science. Prof. Putnam does not believe that any one tribe or race built the earthworks, and he is therefore anxious to ascertain the tokens left by all the races, and to so explore and examine and collect and arrange as to leave the characteristics of each separate layer or horizon.

If the Peabody Museum will continue in this good work and shall lead the other societies and museums to systematic surveys, we may yet have archæology in this country where it ought to be. There has been too much superficial work, too much eagerness for relics, too much crudity in the ideas of explorers, and too little disposition to study and investigate. This journal has advocated the better method for a long time, even at the risk of offending many who might be patrons.

We are happy to believe that the AMERICAN ANTIQUARIAN is regarded as authority both in this country and in Europe, and to know that the position which it has taken about the mounds has the approval of the best archæologists in both continents.

NOTES ON CLASSICAL ARCHÆOLOGY.

By PROF. A. C. MERRIAM.

PERGAMUS. — The excavations of the Germans at Pergamus, which added so largely to the treasures of the Berlin Museum, especially in the discovery of the reliefs of the great Altar, were renewed last August, under the superintendence of Conze, Humann and Bohn, as before. The town was situated upon a lofty hill, possessing a steep descent to the north, but a gradual approach from the south. The summit was crowned by an acropolis, of no great size, but containing a temple of Julia on the northern extremity, an Augusteum further south, adjacent to which was the temple of Athene Polias, and near the beginning of the slope came the great Altar. The recent work has shown that the Altar stood in the market-place, which was surrounded by a circuit wall connecting with the citadel proper, before whose gates the agora was situated. At the beginning of the period of the kings, a city wall was constructed on the southern slope so as to include the space on that side nearly half way down the hill. This, however, did not suffice, in the more prosperous days, and probably Eumenes II. built another of much greater circumference, extending to the foot of the hill. Beyond this the city was extended in Roman times, but so far as is known without an outer wall to protect it. Under the Cæsars the town dwindled till it was found necessary to run another wall between that of Eumenes II. and the earlier one, and in Byzantine times the circuit was still further contracted and the wall erected near the crown of the hill, but outside of the market-place. Lastly, about the sixteenth century, the limits returned to the acropolis alone, and the Turks, as it would seem, built upon the old wall there. It was in these latter walls that many fragments of the great frieze were found, showing that the Altar had been used by the builders as a convenient quarry for their fortification.

The position of the market-place was fixed by an interesting discovery. In the neighborhood of the Altar a cubical stone was found, containing an inscription of six lines in elegiac metre, the two first, and a part of the third line being badly injured, but the rest was legible. The importance of this inscription was not perceived on the spot, but as soon as it was shown to the epigraphist, A. Kirchoff, he saw that in one place the words had not been rightly divided, and pointed out its real significance. It runs in this wise: "Apelles placed me, Hermes the messenger, together with the Nymphs, as an everlasting guardian of good order, to secure which the outflow from the horn of plenty here shall proclaim to the people of the market, when it has ceased, the limit of the prescribed time." From this it is seen that the block served as the base to a statue of Hermes, who is conceived as the market god, holding in his hand a cornucopia with a minute orifice at its lower extremity through which water could slowly ooze, and thus act as a *cepsydra* to mark the time of opening the market, when it began to flow, and its close when it ceased. At Athens, these moments were proclaimed by the ringing of a bell, and no doubt something of the kind was in use at Pergamus. The arrangement would correspond to ours on change, at banks, etc. Such use of the cornucopia may perhaps offer an explanation for the form of the Pontius-fountain of the gardens of Mæcenas, where the horn serves no visible purpose, as the water was brought up from below and poured out near its lower end, the horn now forsaking its original design, and being employed only for fruits and flowers, or simply as an ornament suggesting its earlier purpose. It is worthy of note that among the lead *tesserae* from the collections at Athens, figured in the January number of the Bulletin de Correspondance Hellenique, one is stamped with a sea-horse carrying on his back a cornucopia. The accompanying legend shows that the *tessera* represented the *agoronomi*, or superintendents of the market, of whom Apelles was one at Pergamus; while other *tesserae* of the same series bear the caduceus of Hermes.

Certain indications seemed to show that this base had never been moved from its position, and it was therefore inferred that here was the market, upon whose highest point stood the great Altar, and immediately many other circumstances presented themselves in confirmation, and not long after, the circuit wall of the agora was discovered and traced out. An inscription mentioning the "Altar of Zeus, the Savior of the agora," is thought to give the real name of the Altar, which was not before known.

Of sculptures, a considerable mass of fragments of the small frieze has been gathered, and whole giant of the greater. This figure is winged, and resembles in some respects the antagonist of Zeus already in the Berlin Museum.

Two theatres have been found, one of the time of the kings, the other Roman. The former is just below the acropolis on the west side, with a magnificent view down over the plain, the other is at the foot of the hill where the Roman town spread out. This circumstance leads the excavators to hope that the former has not been built over in Roman times, as is so often the case, so that whatever they find will be of a purer style.

W. S. Ramsay has found in the possession of a private person at Smyrna, a relief of the third century B. C., as he thinks, representing a horseman feeding a serpent wound about a tree. At one side stands a figure as if a worshipper. An accompanying inscription, partly gone, mentions the hero Pergamus, so that Ramsay thinks it must have come originally from that town.

PREHISTORIC GRAVES AT ANTIPAROS.— Mr. J. Theodore Bent has been engaged during the past winter in taking a tour through the Aegean islands, and has made some interesting discoveries on the island of Antiparos, the ancient Oliarus, one of the Cyclades. The substance of his investigations he has published in a letter to *The Athenæum*, and they will appear more at length in the Journal of the Hellenic Society. He was led to make excavations on Antiparos from the existence of extensive graveyards all over the island, which argued a considerable population at some remote period; and as there are few allusions to the island by the ancients, and no traces of ruins during historic times, he inferred that the graves belonged to an unknown period. He opened thirty or more graves, some on the west side of the island, others on the southeast. "Those on the western slope were very irregular in shape — some oblong, some triangular, some square; they generally had three slabs to form the sides, the fourth being built up with stones and rubbish. There was always a slab on the top and sometimes at the bottom of the grave. They were on an average three feet long, two feet wide, and seldom more than two feet deep. In every grave here we found bones, chiefly heaped together in confusion, and most of them contained the bones of more bodies than one. In one very small grave we found two skulls so tightly wedged together between the side slabs that they could not be removed without smashing them. From this we may argue that the flesh had been removed in some way before interment," thus differing from the habit of cremation at Hissarlik as disclosed by Schliemann. The graves in the southeast of the island were larger and better built, containing only one body each, the head of which had invariably rested on a slab as a pillow. The finds in the western graveyard were mostly pottery of very rude character, sun-dried or slightly baked, sometimes with bits of marble mixed in the clay, as in a Berkshire barrow. The ornamentation is incised with the usual patterns, — criss-cross, herring bone, or simple lines. "Here, too, were some rude marble representations of the human form, somewhat in the shape of a violin, the purport of which could only be recognized by comparing them with more advanced marble figures in various gradations, which culminated in the rude representations of men and women which we found in numbers in the southeastern graves. Bits of terra-cotta at Hissarlik resemble these rude figures, but marble ones seem to be a specialty of the Cyclades. Lenormant is wrong in supposing them to be representations of the Asiatic Venus, for male figures are found, though more rarely. In some of the tombs we found marble legs by the side of the figures, and broken figures, and one headless silver one; doubtless they had some religious purport, ex-voto or otherwise. Curiously enough, the grave on the southeast in which we found most treasures had no trace of bones in it. The contents were as follows: two marble female figures, one marble leg, two silver rings of very rude workmanship, a bronze band, two marble plates (one large and one small), an earthenware pot with lid (perhaps the body had been burned and the ashes put in this pot), several obsidian scales or knives, and one obsidian core. In nearly every grave to the southeast we found lots of obsidian knives, none in those to the west; the pottery in both pointed to the same period, but the marble articles in the southeastern graves showed considerable advance. For an explanation of these obsidian knives we have to turn to the Aztec cities of Mexico, where they were in general use at the time of the Spanish conquest. If the obsidian knives from Antiparos were to get mixed with the obsidian knives in the British Museum from Mexico, it would be impossible to separate them. Obsidian is found in quantities at Antiparos, about a mile from the graves."

Many of the vessels of terra-cotta, and also one of marble, had horizontal tubular holes for suspension, like those at Ilium in the lowest stratum. These and a twisted

bracelet of silver alloyed with copper, fashioned like a torque complete the list of objects of importance. To fix the relative age of these graves, Mr. Bent compares them with Schliemann's excavations at Ilium, and the graves opened on the island of Therasia, just west of Thera (Santorin), by the French School under M. Fouque. "The pottery found at Therasia is greatly in advance in style as compared with the pottery found at Hissarlik, having fair attempts at representation of animal and vegetable life on it. Again, the pottery at Antiparos is far behind that at Hissarlik in design and quality, and perhaps the fact that the richest grave we opened had no bones in it may point to an introduction of cremation from the mainland." Hence the antiquity of the objects from Antiparos is very great, and Mr. Bent has added some very important evidence to the scanty materials for solving the Prehistoric Problem of the Aegean.

THE STATUE OF ATHENE PARTHENOS.—This celebrated statue in the Parthenon, at Athens, vied with the Zeus, at Olympia, among the masterpieces from the hands of Pheidias. Both were of colossal dimensions, and both chryselephantine. Pausanias describes the Athene as follows: "Upon the middle of the helmet is a sphinx, and on either side of this a griffin has been wrought. The statue represents the goddess standing, clad in a tunic reaching to the feet, and wearing a Medusa's head upon the breast. In one hand she bears a Victory four cubits high, and in the other a spear. Her shield rests near her feet, and near the spear is a serpent, that might be Erichthonius. The birth of Pandora, after Hesiod, is wrought upon the base."

The statue is known to have been standing in the temple as late as the end of the fourth century A. D., but since the revival of learning no trace of it has ever been discovered, except the spot where it once rested. What was more strange was the fact that among all the copies of ancient statues which adorned the museums of Europe, none of this masterpiece were known to exist, and it was not till 1859 that any definite notion of the figure and its accessories was obtained. Ch. Lenormant then discovered at Athens a statuette, which had never been chipped out completely, and possessed no merit as a work of art, but still presented, as was quickly seen, the main features of the great original. The attire, ægis and helmet corresponded to the description of Pausanias; the shield rested upright under her left hand, with the serpent lifting its head and peering out from within its inner concave. The right hand had not been blocked out at all. This figure at once took its place in works of art as the stock representative of the Parthenos. Conze, in 1874, added another feature, by pointing out that the fragment of a marble shield in the British Museum depicted the conflict with the Amazons which adorned the outer surface of the Parthenos shield, in the midst of which Pheidias had placed his own portrait, in the person of a bald-headed man, slightly clad, wielding a battle axe. It was this portrait which brought upon the artist the charge of impiety, and threw him into prison, where he ended his days.

Six years later, as some excavations were proceeding near the Varvakion, at Athens, a statue was discovered, of Pentelic marble, about three feet in height, and in a remarkable state of preservation. It not only confirmed the details of the preceding statue, but supplied many in which that was wanting, and presented more of a work of art. The face as seen in profile in the photographs, is one of rare beauty and sublime repose. The helmet shows the sphinx, and originally had a figure on each side of it, but one of these is now gone, and the other has lost its head. They were not the griffins of Pausanias, however, but pegasi. The right hand rests upon a pillar, and supports the Victory as she stands with partly folded wings. The ægis, shield and serpent as before, though in better detail; yet no spear. This copy is supposed to belong to the time of Hadrian.

The latest contribution is due to Kieseritzky. Its objecst came originally from distant regions of the Crimea, and have been long waiting identification. When the tumulus of Koul-Oba was opened, in 1830, near Kertsch, the ancient Panticapæum, among other objects was found the head-dress of a female, adorned with pendants of gold, two of which were medallions, arranged to fall over the temples. These medallions are engraved with the head of the Athene, in three-quarter view, turned toward the right on the one, towards the left on the other. The helm resembles the Varvakion statue, with crest, sphinx and two pegasi, together with additional figures engraved—a griffin and an owl, a row of five griffin heads, and five deer heads; curls fall to her shoulders, ear-rings and a necklace add to her garniture. Upon her left shoulder rests the spear, supported by one of the serpents of the ægis coiled about it, so that she does not need to touch it with her hand, a fact which is also shown by a gem adduced

by Schrader. As the Kertsch tomb is assigned to the beginning of the fourth century B. C., Kieseritzky sums up his conclusions thus: "We find, in the first place, upon our medallions all that the Varvakion statue offers; secondly, we see everything confirmed which Pausanias described; thirdly, the evidences are clear that the artist copied direct from the original, and has given all the details of the model; and finally, that our medallions are the later work of the Pheidian school, and the oldest copy which we have of the masterpiece of the master himself. Hence, it follows that we have here a copy which may lay claim, beyond any hitherto known, not only to the greatest fidelity but also to the greatest completeness."

SCHLIEMANN'S WORK AT TIRYNS. — Prof. Mahaffy writes from Nauplia on the 4th of April that Schliemann is pushing his excavations at Tiryns with fifty workmen under the charge of Dr. Dorpfeld, the architect whom he had with him at his last siege of Troy. The foundations of a Doric building had been discovered, and plenty of archaic pottery, but nothing more of importance. Dr. Dorpfeld has recently discovered that underneath the temple at Sunium, whose standing columns have given the modern name to the promontory, an older Doric temple had existed which was but a trifle smaller than the later one. It is conjectured that the older one may have been destroyed by the Persians. It had been built of the local stone, while the later was of marble. Mahaffy was to start at once for Sparta, Messene, Bassæ, and Olympia, where the Archæological Society is to re-commence the excavations abandoned by the Germans.

Dr. Schliemann himself writes later that the Doric building turns out to be a vast palace, comprising the entire acropolis of Tiryns, with its foundations and walls well preserved. The marvel of it is the wall-paintings in this "prehistoric palace," which Dorpfeld has taken good care to copy in the original colors. The ground plan of the building can be completely made out. From another source we have the following account: The palace belongs to two different epochs, the oldest that of the Mycenæan graves, the second, not possibly later than the ninth century B. C. No traces occur of the ordinary Hellenic pottery, no traces of Asiatic influence; on the contrary, the terra-cottas are either wholly similar to those from the Mycenæan tombs, or they are ornamented with geometric patterns and very rude representations of animals,— a class which was regarded as the oldest in Greece before the discovery of the Mycenæan graves. Numerous Here-idols in cow-form, or as a woman with two horns, and also a quantity of obsidian knives point to an early period. As at Troy, the lower walls of the palace are of large stones with clay filling, the upper of unbaked bricks. The paintings on the plastered walls are of the most varied colors, and among their designs are found all those sculptured on the ceiling of the Thalamos at Orchomenus, and upon the remains of pillars at the Mycenæan "Treasury of Atreus." The discovery of these wall-paintings is one of the most unexpected which Schliemann has made, and will necessitate the reconstruction of many of the common theories and statements in relation to that period. It may be remarked that no hint of such painting for decorative purposes is to be found in either Iliad or Odyssey.

Chr. Belger (Philolog. Wochenschrift) calls attention to the fact that Friedrich Thiersch, while excavating for a single day at Tiryns, in 1831, lighted upon the same building with its bases of columns, and that he also was convinced that it was a royal palace, though he did not pursue his inquiries further.

THE TERRAMARE.— It was in the year 1853 that a grave containing prehistoric remains at Villanova near Bologna was discovered, and attention was thereby drawn to a series of objects which further excavations have proved to be spread throughout that region westerly as far as Piacenza, between the Po and the Apennines. The ancient settlements to which these remains belonged have been named Terramare, and consisted of a space of varying dimensions from which the earth has been excavated for the purpose of forming a rampart-wall about it, which is supposed to have been protected by palisades, and thus formed the embryo of the Italic castellum with its wall and ditch. Only five of these have been found in the vicinity of Bologna, but westward beyond the river Penaro they are more numerous and more extensive, and exhibit objects more richly wrought. They are to be found on the lowlands of the rivers and upon the spurs of the Apennines as well The nationality of these people has been the subject of much discussion. The latest contribution to the subject is that of Signor E. Brizio, who decides that they were Ligurians of Iberian origin, and that they dwelt in the vicinity of Bologna till driven out by an irruption of Umbrians, when they retired westerly beyond the Penaro which formed the boundary of the two peoples for a long time. His conclusions are based upon the following considerations. The cemetery at Villanova contains for the most part the

remains of Umbrians who practiced cremation; but there was found occasionally a skeleton resting upon the right side, with knees bent and one arm crossed upon the breast, like those discovered by Calvert and Schliemann at Thymbra in the Troad. These are so different from the other graves that Brizio believes them to be the remains of the ancient Ligurian inhabitants who had been enslaved by their captors, the Umbrians, and had retained in captivity the customs of their earlier freedom. The measurements of their skulls are such as to render their kinship to the Ligurians probable. Some have seen in the better class of graves at Villanova only a further development of the same people; but Brizio maintains that this cannot be so. The form of the graves is different, and about the ossuary a large number of miniature vases are gathered, which never are found in the terramare, even in the latest which probably belong to the iron age. The similarity of much of the pottery cannot be held as proof of kinship. The other considerations are really distinctive, and mark a genuine ethnological difference between the people of Villanova and the terramare.

THE ATRIUM VESTÆ.—The excavations carried on upon this site were closed on the 17th of March. The whole space has been explored except a portion at the northwest corner which is occupied by the church of S. Maria Liberatrice, and this cannot be purchased except at an enormous price, and it is certain that the results would then be meagre, as the walls of another church of mediæval days lying beneath the present edifice must have cut through the house of the Vestals there. Lanciani compares the architecture of the Atrium to that of the Mediæval and Renaissance double-storied cloisters. The portico on the ground floor had 48 columns of marble, though not a piece is now standing. The upper story had an equal number of columns, though smaller, and two of these have been found entire, their material being such that they could not be burnt into lime. The Atrium was surrounded by state apartments on the ground floor, and by those of the Vestals above. Behind the cloisters was a fine hall, corresponding to the *tablinum*, with a marble pavement of the style of Septimius Severus, and the walls were encrusted with rare marbles also. On each side of this hall were three small rooms, supposed to have been the repositories where the wills of the emperors were kept, together with other archives.

The position of the house was a very unhealthy one. Being built against the cliff of the Palatine, at the bottom of an artificial cutting, its ground floor lies 30 feet below the level of the Nova Via, and this street is actually supported by the back walls of the state apartments on the west side of the Atrium. Scarcely any shade could have reached it, and the dampness was productive of much illness. To obviate this difficulty, great precautions were taken in the construction of the walls and floors. Ventilators and hot air furnaces are to be seen in every corner. Every room subject to damp had its floor raised for a free circulation of hot air beneath, the floor-tiling being placed upon half-sections of *amphoræ* sawn in two; a device which would be more effective than the terra-cotta cylinders or brick pillars commonly employed by the Romans in their *hypocausta*. Formerly a physician was not allowed to enter the Atrium, but as soon as a Vestal fell ill, she was removed to the care of her parents, or some distinguished matron. Pliny the Younger tells of a matron who contracted a wasting disease herself in the care of one of the virgins committed to her charge (Epist. vii. 19). A change was made later on, and in the fourth century an inscription makes mention of an *Archiater* or physician attached to the establishment.

BANQUETING SCENES ON GREEK TOMBS.—Professor Percy Gardner read a paper before the Hellenic Society in March, upon this much-debated subject, pointing out that three views of their significance had been maintained by rival archæologists: (1) that the banquet belonged to the past life of the individual buried, being an ordinary event of every-day life; (2) that it stood for the sepulchral feast, or the offerings brought to the tomb of a dead person by the surviving family; (3) that it represented the sensual pleasures of the Greek Hades. The discovery of a number of sepulchral reliefs in recent years in Laconia, on which deceased heroes are represented as seated, holding a winecup and a pomegranate, and accompanied by their wives, while votaries approach them bearing offerings, has furnished new materials to the discussion. This additional evidence shows that the first of the theories above mentioned is not tenable. Between the second and the third we may still hesitate, as the Greeks seem to have hesitated, for they never made up their minds whether the dead resided in the tomb or in Hades. The horse and dog which sometimes

appear on the sepulchral reliefs alike of the Spartan and Athenian classes are the favorite animals of the dead warrior, and they might well be supposed to accompany him to the lower world. The snake, which is a very usual addition, was regarded by the Greeks as the companion of the dead, and an animal produced by the decay of the human body. On some of the banquet scenes from Athens and Argos, as on the Spartan stelæ, votaries are represented as entering, and bringing the feasting hero offerings of food and drink. On some extant votive reliefs the place of the hero and his wife is taken by Æsculapius and Hygieia. These are closely copied from the sepulchral monuments, and the occurrence in them of a horse and armor seems to show that Æsculapius was regarded as a deceased mortal to whom such trophies were appropriate.

THE city of Eryx, on the west coast of Sicily, near which the scene of the Fifth Book of the Æneid is laid, has long been supposed to have been a Phœnician foundation. This has now been proved by the discovery of Phœnician letters on the foundation stones, probably mason's marks.

THE Archæological Society of Athens will continue its excavations at Eleusis and Epidaurus, this year, and begin work at Olympia. Another enterprise will be an attempt to dredge the sea-bottom between Salamis and the mainland, to bring up, if possible, relics of the Persian and Greek vessels sunk there in the great battle some twenty-three centuries ago.

NOTES FROM ORIENTAL PERIODICALS.

By PROF. JOHN AVERY.

In the last number of this journal we gave an account of the beliefs and practices of certain primitive tribes in south-eastern Australia. We find in the *Journal of the Anthropological Institute* for February another paper of much interest, by Edward Palmer, on similar rude peoples, lying for the most part along the north-eastern border of the same country. These tribes have no settled abode, but wander in search of game — each over the territory which has been set apart for it by some ancient and general agreement. Within these limits there is no individual ownership in the soil. Physically they are rather superior to the tribes farther south; both men and women are tall and muscular, and the former have full beards. They differ considerably in color; some individuals being almost black, while others have a reddish-brown complexion. Like the American Indians, they are capable of enduring great privations, and submit to pain and death with fortitude. The tribe has no official head, but matters of public concern are settled in a common council, where all have a right to speak, though the advice of the elders naturally carries the most weight. This constitution of society is paralleled by that of the Nagas and other tribes on the borders of Assam. Cannabalism, though of quite a different sort from that of the South Sea Islanders, exists among them. It does not appear that persons are killed expressly to indulge this propensity, or that the flesh of enemies is eaten; but when friends die in battle their bodies are sometimes skinned and roasted whole in a pit dug for the purpose. Infants are a special delicacy, though this has not led to a common practice of infanticide. The writer believes that the eating of human flesh is, in their case, rather the survival of a traditional usage than the gratification of any present craving for such food. Their principal weapons are the reed-spear and the boomerang; the former is discharged with the aid of the throwing-stick more than one hundred yards with great accuracy and force.

These tribes, like those before described, believe in a future life. The dead are supposed to linger for a time around their home, and then to climb up by the Southern Cross to the Milky Way, along which they travel to the Spirit Land, called Yalairy. Their Heaven is patterned after this world, only it has much more to please the eye and gratify the appetite of a savage. There resides the Great Spirit, who rules among its inhabitants. On their way thither the dead supply themselves with food from two huge carpet snakes, forty miles long, which they kill, but which are immediately reproduced for the next comers. The custom of knocking out the two front teeth at the initiation into manhood is explained by some as enabling the soul

to drink pure water in heaven. The ascent to the upper world is by a rope, which the spirit lets go on arriving. The falling of the rope is seen in the shooting stars, and the explosion sometimes heard in connection with them is thought to be caused by its breaking and striking the earth. Though these tribes have an indistinct idea of a Chief Spirit, they confine his providence to the celestial domain, and make it their great concern to keep the peace with a multitude of inferior spirits who throng the lower world. These live in and about trees, and are on the whole pretty well disposed toward mankind. They are themselves rather timid, but love to wander around after nightfall, and hold communication with the wizards and old men of the tribe, whom they instruct in the national dances and songs. They have the same habits and appearance as the black men, except that there is no flesh on their bones, their eyes are like balls of fire, and their ears are long and pointed like horses'. A belief in magic arts of course attends such imaginings about the spirit world. It is held that one can kill his enemy with an invisible spear, whose point breaks off in the body and leaves no outward mark; or by pointing at him with a certain bone one can cause his death; or with a bark rope one can partly choke him in his sleep, and then take out his caul-fat and tie up his inwards. The victim is unconscious of the injury until some time after, during violent exercise, he feels the string give way within and dies. They have explanations for the appearances and movements of the heavenly bodies. Their rising and setting is simply that they go down through a hole beneath the earth, and come up on the other side by a similar aperture. The dark spots on the face of the moon are scars on the person of a huge black fellow who once killed a number of their people, and was killed and burnt in turn.

The dead are disposed of in various ways; they are sometimes burnt, but are generally buried or laid on platforms six or eight feet high, and covered with bark and boughs. When a young child has been eaten, the mother will sometimes carry its bones for months suspended at her back in a bag. The class system of marriage prevails among these tribes, as probably among all the Australian blacks. According to this, they are divided into sections or classes, each with its totem or symbolic animal, and inter-marriage between certain classes is strictly forbidden. Descent is reckoned in the female line, and the child takes the class-name of its grandmother. The languages or dialects of these tribes are very numerous, but their near relationship is proved by a general similarity of structure and frequent agreement in the sound and meaning of words. Their nouns have no inflections to denote number or case. They have no names for numerals above five. Individuals from distant tribes soon make shift to understand one another. Besides oral speech, many of the northern tribes employ a sign-language.

While speaking of the rude tribes of Australia, we will briefly refer to a second paper on the ceremony of initiation into manhood, by Mr. Howitt, in the same journal for May. The writer has not only frequently witnessed this ceremony, but has himself passed through the ordeal, so that a more competent narrator could hardly be desired. He tells us that the custom, with local variations, is found all over the continent, and serves to bind the individual tribes into larger communities. In connection with other ceremonies which are intended to impress upon the youth the importance of the larger life upon which he is about to enter, much instruction is given concerning his moral and social duties, as these are understood by his tribe. Mr. Howitt's second account differs considerably from his first in the details, but the principal features are so nearly the same that we need not further allude to it.

UNDER the title, The Etymology of the Turkish Numerals, we find a paper by Dr. S. W. Koelle, in the *Journal of the Royal Asiatic Society* for April, some account of which will interest our readers.

The Turkish language has invented distinct names for the units, the tens, one hundred, and one thousand; and Dr. Koelle thinks he has earned the honor of having traced each of these back to its primitive signification, and having assigned the true reason for its selection. The key to the discovery was found by the writer while he was preparing his Polyglotta Africana during a residence at Sierra Leone. Having occasion to interrogate hundreds of natives from every part of the continent of Africa concerning the numerals in their languages, he noticed that they generally counted on their fingers, or fingers and toes. Those who had no number higher than five counted on one hand only, then laid the objects aside and began over again. The order of counting was always from the little finger to the thumb of the left, and then from the same finger to the thumb of the right hand. The theory suggested by these facts Dr. Koelle first tested on the numerals of the Vei language, of western Africa, which he happened to be studying at the time. He found that *one* properly

meant 'very little,' that is, it was so called from the little finger of the left hand, with which the enumeration began; *two* was the 'companion;' *ten*, the 'stop,' when all the fingers were counted; *twenty*, 'finished,' when all the fingers and toes of one person had been enumerated; *forty*, 'two persons finished,' or the fingers and toes have been numbered twice.

After Dr. Koelle had removed to Constantinople, he sought to find a similar basis for the names of the Turkish numerals. The following will give some idea of the results of his study, without going into details. He found that *one* meant "foremost," that is, the first finger to be counted; *two* signifies "addition;" *three* is "topmost," referring to the length of the middle finger; *four* is the "pointer" or "pusher;" *five* is the "head," the thumb, from its position on the closed hand, being still called the "head-finger" in the Turkish dialects; *six* is the "low" number, the little finger of the right hand being quite subordinate to the "head-finger" of the left; *seven* is the "follower," as being in itself weak and obedient to the movements of the little finger; *eight* is the "rebounder," from the habit of snapping with the middle finger of the right hand; *nine* is the "toucher," from a characteristic act of the index finger of the same hand; *ten* is "aside," that is, when men could count only up to ten the articles were "put aside" to begin with a new set; *twenty* is "twice-reaching," to the end of a decade; *thirty* is "rest," after the third decade; *forty* is a "break;" *fifty*, the "close;" *sixty* and *seventy* properly mean "having sixed" and "having sevened," that is, having performed the operation of counting the tens six and seven times; *eighty* and *ninety* are really formed by uniting the unit and the ten, but the two are so disguised as to be almost past recognition; *hundred* means "face," "front," which probably indicates that at the time of its invention it was the highest number counted; *thousand* is from a verb "to mount," that is, it surmounts all the other numbers. It will be seen from the above outline, that the ingenious scholar has apparently reached some very curious and striking results. It would be interesting to pursue the inquiry in other languages whose roots, like the Turkish, have not been so denuded as to efface their primitive meaning. Of course the danger in such inquiries is that the scholar shall be led by an attractive theory and a vigorous imagination to form conclusions which are not justified by a sober estimate of the facts. Whether Dr. Koelle's judgment has been to any degree warped in this way, we must leave to those who are more profoundly versed in Turanian etymologies.

AMERICAN ARCHÆOLOGY.

MOUND BUILDERS AND THEIR MIGRATIONS.—A writer in the Kansas City *Review* for March has taken the ground that the Mound Builders first resided on Vancouver's Island, and on the north-west coast as the earliest home or cradle land and that from this region two streams of migration can be traced—one down the Missouri river and the other down the Saskatchewan and up the Red River into the valley of the Mississippi. The theory is a good one, but the same author says that garden beds are properly terraces, and that spiral paths are common around the mounds, and that cruciform mounds are found pointing with great exactness to the cardinal points. The author also says that specimens of pottery can be collected among the mounds which cannot be distinguished from Egpytian Mesopotamian or Greek. The same author also says that the characteristics of the Mound Builders is a low, retreating forehead and flattened tibiæ, but that they differed from Indians and were one race from Vancouver's Island to Texas and Florida. The pyramids of the Cholula he compares to the temple mounds of the Mound Builders, and says that pyramids are found in Chaldea, India, China, Mexico, South America, as well as Egypt. In reference to all these points we would say that the statements are important if they are true. A half truth sometimes proves as misleading as an untruth. The Red Indians may have migrated from the northwest, but are the mounds found in their track? The Red Indians had retreating foreheads, but is this a characteristic of a typical Mound Builder's skull? A great resemblance may be found between the races in America, but is the resemblance enough to prove all to have been of the same race? The pottery in America has some resemblance to the pottery of Egpyt, but it is very faint. The pyramids of Cholula and Kahokia are somewhat alike, and pyramids do exist in America as well as in Chaldea and Egypt, but are there no differences in pyramids? The definite and specific points of difference between the Mound Builders and the other races, and between the different classes of Mound Builders are what we want to know before we trace this people to any line of migration, or identify them with

any particular race. This is the fault not only with this writer but with many others of much wider reputation. When it is said that the Mound Builders were Indians, we want to ask what Mound Builders and what Indians? And when it is said that the Mound Builders migrated, we want to ask what class of Mound Builders migrated and which way the migration took place? It will not answer to guess at anything in archæology, for we are more likely to guess wrong than we are to guess right.

MOUNDS IN MINNESOTA.— Mr. T. Lewis has explored mounds in various parts of Minnesota, and has described the situation of many of them. According to his report the mounds are most numerous in the vicinity of Lake Minnetonka, but extend from this region, up the St. Croix River, up the Minnetonka River, down the Red River, on the Big Stone Lake, on Lake Traverse, near Winnepeg and Manitoba, and on the Mississippi river as far as Little Falls. A large tumulus, eighteen feet high, still exists on Dayton's bluff, near St. Paul. Long mounds are found on Lake Minnetonka.

DR. SCHLIEMANN.— Harper's for May contains a full historical sketch of Dr. Schliemann, which will have much interest to our readers. The author, however, takes issue with Dr. Schliemann in his conclusions.

BOOK REVIEWS.

Ten Great Religions. A Comparison of all Religions. Part II, by JAMES FREEMAN CLARK. Houghton, Mifflin & Co., New York.

Mr. Clark says: We find that religions begin very differently. Some are slowly unfolded by gradual process out of the life of a nation or race, others come more abruptly, not so much by development as by a kind of crisis. The first are the aboriginal religions, the latter the historic. The sources of religion are three-fold, supernatural revelation, natural revelation by religious ideas planted in human nature, and the transformation of the experience of the senses into something higher by a process of evolution, or by the imagination. Belief in disembodied spirits is the lowest form. Animism, polytheism, pantheism are the grades. Monotheism, the author thinks, is the product of historic religion. There are, however, signs of religious decay. The Mexican religion is the degenerate form of a higher faith. Idol worship is polytheism pushed to its extreme limits. The worship of a triad is polytheism arrested, and the duad or dual system another phase or form of the arrested development. The Persian or Vedic, passed on into the Indian or Budhistic, the one dual and the other triad. The idol or fetich comes very easily upon the scene. Fetich worship continues to-day in the midst of civilization. The polytheism of Egypt inhered in the nature of things, the Divine elements were seen dwelling in nature. The divinities were impersonal. The polytheism of Greece was anthropomorphic. The gods were divine men no longer representing sun, moon, stars, thunder, clouds, dawn, fire, ocean, though traces of this origin remain. Polytheism in India had another quality. There were no abstract ideas as in the gods of Egypt, no pure humanities as in Greece, but the forces of nature spiritualized into objects of reverence and love. The distinctions made by Mr. Clark are very wise and just. The book is a valuable one and we have no doubt that our readers will want it. It is a book which we can well recommend.

A Vindication of the Mosaic Authorship of the Pentateuch, by CHARES ELLIOTT, D. D., Professor in Hebrew in Lafayette College, Eastern Pennsylvania. Walden & Stowe. Cincinnati, 1884.

This little volume is an excellent answer to the many theories in reference to the Post Mosaic origin of the Pentateuch. The author first gives a history of the criticism, then reviews the positions of the modern critics. He denies the documentary and the fragmentary theory; maintains that Elohim and Jehovah are used indiscriminately in all passages. He then takes up the phrases which have been considered as originating in a late period of history, and so analyzes them as to show that they might have been written by Moses himself, some of them, to be sure, anticipative, the legislation being prophetic, but the descriptions of events and localities being

retrospective. The destructive critics do not seem to have much idea of dignity, morality, or even common honesty, for they say that the authors of the books of Moses wrote out the laws after the days of exile from 600 to 450 B. C., and then ascribed them to Moses, fixing their date as 1,000 years earlier. Religious teachers of this kind now-a-days would hardly be considered worthy of trust, but the Bible made up in this way is supposed by the critics to be just as trustworthy as ever. One illustration drawn from American history is forcible. Referring to the priest code of laws, as of late origin the author say what would be thought of an act of the American Congress, at the present day, ordering the removal of Indians of New York, Pennsylvania and New Jersey to an Indian Reservation in the West.

Clavis Rerum, I am Alpha and Omega, the beginning and the end, the first and the last. Rev. XXII., 13. Published by F. A. Robinson & Co., Norwich. 1883. 142 pages.

Perhaps the best illustration of the tendency of thinkers to seek for the key for all things is found in the title of an anonymous book called "Clavis Rerum," published by F. A. Robinson & Co., Norwich. The book does not state whether this is Norwich, Connecticut, or in some other world; but this is well, for evidently the author desires to get beyond all limitations of time and space. Thought is now purely abstract. This last book carries the subject into the clouds. "To all those who, in any branch of learning, whether concerning the finite or the infinite, are seeking after truth, this essay is respectfully inscribed." We leave it with those to whom it is addressed to study and see if they find in it the "Clavis Rerum." "The author has carefully explored for clues whereby he might be led toward that *central point*, from which alone the labyrinth of created nature could at once be seen and understood." Of course, if he has reached the central point, and found the key, we should all want to enter in and learn about the secret things which he is to disclose.

A passage of scripture begins and ends this book, but the whole process has gone beyond all material conceptions. Metaphysics have now taken up the clue. Cosmical, theories, must, however, be carried through to the end. The attempt to make the same theory which has been ridden so hard through all the paths of world-making, must now be a Pegasus and rise to the height of universal thought. If he soars beyond our comprehension, so much the better; ignorance is an aid to devotion."

Elements of Hebrew by an Inductive Method, by WM. R. HARPER, P. H. D. Chicago: American Publication Society of Hebrew. Morgan Park

Hebrew Vocabularies, by WM. R. HARPER. Chicago: American Publication Society of Hebrew. Morgan Park.

The Hebrew Schools which have been established by Prof. W. R. Harper, have introduced quite a new era of Semitic scholarship. The studies so far are elementary, but will undoubtedly lead many to a love of Hebrew, and an admiration for the early primitive languages of history. There is nothing more charming than the Hebrew, when taken in its freshness and originality. The simplicity of the tongue renders it attractive. There is a freshness and beauty about it which even if there were no sacred literature given by it would make it worthy of study. It is poetical, childlike, attractive. Prof. Harper has published these text-books as an aid to beginners. They are well printed and are simple enough in their arrangement for any person to take up, and by the aid of them, begin the study of Hebrew. Correspondence is all that is necessary to carry on quite an extensive course, and this correspondence Prof. Harper has made special arrangements for conducting.

American Explorations in the Ice Zones, by Prof. J. E. NOURSE. D. Lothrop & Co., Boston. 578 pages.

The recent expeditions under Lieuts. Swatka and DeLong, have revived interest in the Arctic regions. Prof. J. E. Nourse has prepared a volume which combines the record of all the exploring parties into one general story. He commences with the "Voyages of the Cabots," of Davis and of Cook, then passes on to Sir John Franklin's expeditions, Kane's Voyage, Explorations of Dr. I. A. Hayes, The Grinnell Expedition, Hall's second expedition, and finally reaches DeLong's. The book is designed as a review of the American Explorations. It is splendidly illustrated, and is well printed, and is very attractive in its appearance. Lothrop & Co. have the faculty of making their books tasty and neat, and always give a fair equivalent for the money in the art features of their works. This volume has the additional merit of very valuable information furnished in a condensed and interesting form.

Quotations in the New Testament, by CRAWFORD HOWELL TOY. Charles Scribner's Sons. New York, 1884.

Quotations are classified under four heads: (1.) Those which agree both with the Hebrew and the Septuagint. (2.) Those which agree with the Septuagint against the Hebrew. (3.) Those which agree with the Hebrew against the Septuagint. (4.) Those which agree with neither the Hebrew nor the Septuagint. Prof. Toy maintains that the quotations of the New Testament are made from the Septuagint Greek. The Hebrew, he regards as a dead language in the time of Christ, but the passages show great freedom in quotation. The modification of the old testament text being sometimes intentional in order to bring into prominence an idea contained in the original. Prof. Toy's fine scholarship comes out in this volume, and the book is an excellent contribution to critical literature.

Horn's Scandinavian Literature from the Most Ancient Times to the Present, by FREDERICK HORN, and translated by Rasmus B. Anderson. S. C. Griggs, & Co., Chicago.

The study of Norse Literature has become attractive in this country. Prof. R. B. Anderson has contributed very much to this result. This translation of F. W. Horn's history of the literature is perhaps as valuable a work as has been presented. It contains a thorough analysis and discription of the old Norse literature, it treats of the middle age of the Scandinavian literature, tfien passes on to modern Danish, and finally ends with the literature of Sweden in the nineteenth century. The first part is the most valuable, although it is so condensed and compact as to be hard reading. The work is scholarly and exhibits a thorough acquaintance with the whole field of Scandinavian literature. Five hundred pages of closely printed matter, with excellent paper, good binding, and substantial instructive reading, makes a valuable book, one which all students of Norse literature will be glad to secure.

The Apostolic Fathers and the Apologists of the Second Century, pp. 203. $0.60.
The Fathers of the Third Century, pp. 211. $0.60. D. Appleton & Co., New York.

These two little crown 8vo. volumes bound in sober blue, suggestive of "blue theology," are of a series as named above, edited by Prof. George P. Fisher of Yale Theological Seminary, and each of these was prepared by Rev. George A. Jackson. They supply a long felt want. In a compact space we have a brief sketch of each prominent writer, of the period covered, and then follows a most judicious selection of the writings, which, so far as we are able to judge, have been faithfully translated. In the first volume we have such as Clement's "Epistle to the Corinthians," Ignatius' "Epistle to Polycarp," "The Shepherd of Hermas," etc. These are now offered us in England where all can readily consult them. Every minister needs them for handy reference, and intelligent laymen will find them valuable. W. S. H.

The Age Temptation of American Christians and Christ's own Methods of Gaining the Victory and the Kingdom, by W. S. TYLER. Anson D. Randolph & Co., New York.

The comparison between the temptations of Christ and the ordinary temptations of humanity is in this book carried out in a very practical and suggestive way. The book is "an improvement" of the temptation, and as such contains very devotional reading. The subjective method of treating the subject is followed out in part, the experience of every individual appealed to. The objective method is also followed out and analogies between the temptations of Christ and the temptations of Christianity are exhibited by history.

Truths and Untruths of Evolution, by JOHN B. DRURY, D. D. Anson D. Randolph & Co., New York,

The hiatus between apes and man is so great as to be a serious stumbling block in the way of any theory of gradual modification. "Is it bodily form or intelligence that is man's chief characteristic?" "The evidence is accumulativewhich serves to disprove the postulate of materialistic and agnostic evolution." These quotations give an idea as to the object and intent of the book. The treatment of the subject is mainly from the theological side, but the positions taken are attended with much forcible reasoning.

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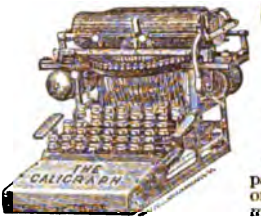

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The American Antiquarian

AND ORIENTAL JOURNAL.

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Clinton, Wisconsin, U. S. A.

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THE

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LECTURES ON POLYTHEISM.

THE HINDOO MYTHOLOGY.

Of all mythologies, that of the Hindoos is probably the most interesting, as it is historically the most important. By it we obtain a key to the meaning of those Greek and Roman myths which form an important portion of our art and literature; in it we have the only elaborate and complete system of polytheism enshrined in a written shape in all its stages. Moreover these writings are worthy of our study for their own sake as art, as well as for the religious history contained in them. Yet they are little read and less understood. Before entering on the main central system of Aryan Polytheism, I must premise that here, as elsewhere, the ancestral worship had not been extirpated. The Pitaras, or fathers, were still adored in the Vedas, and have hymns addressed to them like the other gods. Neither do we find that animal and plant worship had disappeared. The study of this portion of Hindoo religion is very interesting; but my altogether limited work will only allow me, to-day, to speak of their Polytheism in its stricter sense. The principal deities are gathered together in the Adityas, who correspond to the deities of the Norse, and Olympic gods of the Greeks. As to the classification we now have no better guide than the oldest of Vedic commentators Yaska, who says: "There are three deities, Agni, whose place is on the earth. Vayu or Indra, whose place is in the air, and Surya, whose place is in the sky." The latest of these worships was no doubt that of Agni, the Fire. This god is represented as a red man with thin lips and short arms, riding the ram, with flames issuing from his mouth. He lives with

men. He is the priest of the house who rises before the dawn, the messenger between gods and men, who takes up the hymns and oblations, and brings down the gods to the place of sacrifice; he is the mediator. He lives in the two pieces of wood that produce fire by friction. His mother cannot nourish him, he is fed on clarified butter; in later developments he embraces all the creation in his being; he is fire in the sacrifice, lightning in the air, sunflame in the sky, he is Agni-Surya-Vayu. And this brings him into direct contact with Vishnu, who is of subordinate importance in the Veda, but afterwards completely replaced Agni. "Vishnu" in the Rig "strode over the south region of the earth; Vishnu strode over this [universe]; in three places he planted his steps. * * * * Vishnu, the unmanageable preserver, strode three steps." This to me means that the sacrificial fire, which is a dwarf at first, in three steps takes possession of earth, air and heaven; this fire being but the mere altar fire lit by Agni himself in the early morning. The usually adopted interpretation that Vishnu is the sun and that his three steps are his rising, his culmination at noon and his setting seems to be very forced and artificial. Moreover the commentators Sayánacáryá recognized in Vishnu the god of three-fold manifestation, Agni, Surya, Vayu, that is Agni himself, A closer comparison of Vishnu as represented in the Rig with Agni confirms this. Vishnu established the heavens and the earth; Agni stretched them out; Vishnu contained the world in his three strides. Agni is the swift messenger who in the representations of him has been less? Vishnu with Indra made the atmosphere wide, stretched out the world, made the sun, dawn and fire, and received the homage of Varuna. Agni stretched out heaven and earth, formed the sun, made all that flies, walks, stands or runs. All the gods do homage to him. I cannot see any reason for making Vishnu a sacrifice, nor do his pictorial representations do so; they make him a black god dressed in yellow with four arms holding a club, a quoit, a conch-shell and a lotus, and he rides on a gander, the lightning-bird. This last trait is surely conclusive as to Vishnu's nature.

Another fire deity is Tvashtar. His nature and character are universally admitted. He is the Hephaetus, the Vulcan, the Tubal Cain of the Veda. He sharpens the axe for Brihaspati and forges the thunderbolts for Indra. A third fire deity is Savitar; he is not the Sun, but the golden sun-glow before sunrise. He is golden eyed, golden handed, golden tongued. His chariot is drawn by white footed steeds. His golden arms stretched out in supplication, reach across the sky. He is prayed to to conduct the souls of the departed to the abode of the righteous. He is therefore a horizon god, who passes to both worlds, the under and the upper, and is certainly not the sun in his strength. He is like Agni the son of the waters (Apam

napat); the other gods follow him. He is evidently a sunrise, not a sun god.

A fourth deity of this class is Pushan. He is like Savitar, usually reckoned as a sun god. I strongly differ from this. If he is to be reckoned as a sun god then all the gods may be so; at any rate all the Adityas who are in the Brahma Purana identified with the sun. Pushan in the sky beholds the whole universe, is the guide of travelers, the protector of cattle. He is the paranymph of marriage ceremonies, is constantly traveling, especially as the guide of the spirits of the dead to the next world. He is the Hindu Hermes; the Twilight. The identification of Hermes with the Wind has misled some mythologists as to the nature of Pushan. At the funeral ceremonies of the Brahmins, these words are sung: "May Pushan convey thee onward on thy distant road. May Savitar place thee where the righteous abide!"

Closely connected with Pushan are the Asvins; indeed sometimes they seem to be identical with him. They have one wife in common, Surya, daughter of Savitar, but Surya is also beloved of Pushan, and is given to him by the gods. Surya is Pushan's sister, hence Pushan is the son of Savitar. Surya is in fact merely a weakened reflexion of Savitar, the sun glow; and all the daybreak gods the Twilight, the red Dawn, the golden Sunrise, form an inseparable group. The Asvins are the earliest lightbringers of all. They are the peep o' day preceding the Dawn. They ran a race with Soma (who is here clearly the moon and not the planet of that name), for the hand of Surya. They are connected with marriage like Pushan.

And yet one more deity belongs to this group — Ushas the Dawn. She is almost the only goddess who has distinct personality in the Veda. To her the most poetic hymns are addressed there, and in the hands of Professor Max Müller she has grown into the prototype of mostly all the Greek goddesses. I believe this to be a mistaken idea, and that most of the Greek goddesses are fully correlative to Hindu gods. Nevertheless, I do not wish to understate her importance, and if I say little about her now, it is because her meaning and character are undisputed. It is through her, the ever young, that the worshippers are awakened, and the sacrificial fires lighted. The souls of the departed go to her or to Savitar. She is the friend of the Asvins, the wife or mother of Surya, the lord of Agni, the sister or mother of the night.

Of this group of fire deities, Ushas and the Asvins, although largely worshipped, and Agni still more so, never attained admission into the group of the Adityas. This indicates that these gods of sacrifice, so closely connected with ancestor worship, were displaced by the storm and sun deities, and in spite of the abundant popularity of their worship, were never placed by the priesthood on a level with them. It is true that Vishnu, Tvash-

tar, Prithivi and Savitar were alternately placed in the twelve gods, but they were the last four in the list, and did not form part of the earlier group of eight, still less of the earliest group of six. It was from this fact that Hephaesus (Tvashtar) got his name Yavishtha, the youngest or last admitted. He was certainly not the youngest in any ordinary sense, and when they were admitted it was only as a form of sun god. In the Brahma Purana, after a list of the twelve deities, many of whom could not possibly originally have been sun gods, we read: "These are the twelve splendors of the sun, the supreme spirit, who through them pervades the universe." This throws a flood of light on other mythologies, but at the Egyptian shrine the sun is the supreme lord of all. It is clear that the earliest worships, such as those of Ptah, the fire, and Chnum, the water, have been assimilated to the sun eclipse, although we are unable to have them in a separately existing independence.

I must now pass to the consideration of the storm gods. The most important of these is Indra. Indra, Agni and Surya obtained precedence over the other gods by sacrifice; and the number of hymns in the figure addressed to Indra and Agni, shows that of the Asvin, the two popular gods were those two, however the priesthood might advocate the worship of the Sun. In a climate where the Sun's heat is to be dreaded, where the absence of rain is the greatest of curses, next to the hereditary worship of the sacrifice, comes the adoration of the Rain and Thunder, the Storm gods. The worshipers of Indra claimed for him the title of twin brother of Agni. His great enemy is Vitra Drought. Intoxicated with the Soma drink he rushes like a bull on Vitra also, and the straggling clouds meet, who restrain the rain from falling. He is supremely the thunder god; he developed into his present form after the separation of the various branches of the Aryan stock, as his name shows, which is peculiar to India, and is connected with the word India, sap, drop, *i. e.*,soma sap and rain shower. He has appropriated functions which originally belonged to Dyaus, as is evident by comparisons with the Greek and Latin correlations of Dyaus, viz., Zeus and Jupiter. He has therefore strictly no correlative in other deities, but his followers, the troops of Maruts, the pounders are reproduced in Mars and Ares. These Maruts are sons of Rudre, who is of little import in the Veda, though in the latter worship he developed into the dreadful Siva, the destroyer. Vaya, the wind god, is scarcely distinguishable from the Maruts on the one hand and from Indra on the other. He is sometimes called Marut, and is identified with Indra by ancient commentators. Vaya most nearly corresponds with Odi, or rather corresponds with Dyaus. Veda and Rudra do not attain a place in the Adityas, Indra does; sometimes under his name Gorkra and Purandara, sometimes in his proper name.

The other storm, Aditya, is Parjanya, the rain cloud. There is little, if any, distinction between him and Indra; he is, however, distinctly separated from him in the lists; in several of them he replaces Vivasvat, who is in my opinion identical with him. This is so unlike the general opinion that Vivasvat is the sun, that it may be worth while to examine it more closely. From the Sutopatra Brahman, it appears that Aditi had eight sons. But there were only seven whom men call the Aditya deities, for she bore the eighth Martlanda undeveloped into any distinction of shape. The Aditya gods said: If in his nature he does not resemble us, it will be fatal, come let us shape him. The pieces which they cut off him and threw away became an elephant. He whom they so shaped was the Aditya Vivasvat. From the Brahman Rig Veda, it appears that he was twin brother to Indra. Again, Matanisvan is the messenger of Vivasvat when he brings down Agni from heaven. In the Rij von 69-20: May the shaft of Vivasvat, the poisoned arrow not strike us before we are old. In x 17:1. Ivashtar makes a wedding for his daughter. The whole world assembles. The mother of Yama, the wedded wife of the great Vivasvat disappeared. They concealed the immortal bride from mortals. Making one of like appearance, they gave her to Vivasvat. Saranya bore the two Assims, and when she had done so she deserted her first twins. In the Nimkta, xii, 10, we are further informed that Saranya in form of a mare was followed by Vivasvat in form of a horse and bore to him the Assims.

The previous horses were Yama and Yami.* The son of the Subtituted Savares was Manu. Max. Müller says, Vivasvat is the sky, Savanya the dawn, Yama and Yami, day and night. Dr. Muir says, "Vivasvat is the firmament expanding to the light through the approaching light," Savanya is the "dark and cool air heated and set in motion by the approach of the rising sun." Sir G. Cox says, Vivasvat is the sun. I do not in the least understand the interpretation of these gentlemen and very likely my own may to some seem equally unfounded. It has, however, the merit of explaining certain corrected Greek and Norse myths. The parents of Yami and Yama are in R. V. X. 10, said to be the Gard horse Apyê Yosha, the Centaur and his watery wife. I do not see how these can be any thing but the thunder cloud and the mist. This explains the horse forms of Vivasvat and Savanya and the cognate myths of Ixion and Nephele. The horse Cronus and Philyra, the horse Poseidon and Demeter Erinys, who is plainly Savanya; which in turn cast light on the birth of Castor and Pollux Helen and Clytemnester the offspring of Zeus and Lida; Zeus in this story being disguised in a cloud-shape as a swan is not appearing in his majesty as the Heaven.

* In my essay on myths in the AMERICAN ANTIQUARIAN, January 3, 1883, p. 10, l. 4, read Mara for Yama and Yams.

These two Adityas, Indra and Vivasvat, form the concluding twin pair of the list of the eight children of Aditi, the remaining six are Sun and Light deities.

The first pair of twins produced by Aditi were Dhatri and Aryaman. Dhatri, the creator, is but slightly noticed in the Veda; but in one list, and that probably the earliest, he is replaced by Daksha. In Rig x, 72, 4, we read Daksha sprang from Aditi and Aditi from Daksha. Roth says that Daksha means spiritual power and Aditi eternity. Max Müller says:

> "Aditi is the visible infinite, visible by the naked eye,
> The endless expanse beyond the earth, beyond the sky."

Muir says she is "a personification of universal all-embracing nature;" others say she is the sky, and some later Hindoo writings identify her with the earth. It is of great importance to get true views on this point as Max Müller's whole theory hinges on it. I confess my absolute inability to reconcile the reciprocal generation of Daksha and Aditi with any of these theories. It is noticeable, indeed, that this the most remarkable thing known about these devices is quietly shelved by modern interpreters. It stands in the way of their metaphysical solutions. But if any thing is clear it is that only some rhythmical or constantly recurring phenomena, such as Day and Night, Summer and Winter, Birth and Death, or the like, can be symbolized by this pair of deities. I have no doubt that Day and Night, Light and Darkness, was their original meaning. Dhatri or Daksha will then be the creative Day, Aditi the Night. How the idea of Infinity is connected with that of Darkness is too well known to any one who has been afraid of the dark in his childhood: Now the same idea is connected with the earth as being the only thing recognizable in truth when the heaven is shut out from sight is clearly illustrated by the Greek goddesses Leto and Demeter, who indifferently occupy the same place among the Olympic deities. The husband of Aditi is Aditya or Casyapa. To completely understand his position, we must remember that there is another form of this principal pair of deities, viz.: Dyaus and Prithivi. From them all the gods are said to have sprung, as the Adityas from Casyapa and Aditi. Dyaus, the universal parent and creator, as Dhatri (Daksha) is. But no one doubts that Dyaus-pater is the same as the Zeus-pater, Dies-pater. Jupiter, the Heaven father, or Day father, and Prithavir is the earth. There can be now little difficulty in recognizing the innate connection between Dhatri, the creator, Daksha, the day, Casyapa Aditya, the husband of Aditi, Dyaus, the day sky, on the one hand, and that between Arzaman, the dark, Aditi, the night, Prithavir, the earth, on the other. These are all but slightly differing aspects of the same concept.

Most intimately connected with this pair are the two next twins of Aditi, Mitsa and Varana. Mitsa scarcely ever is mentioned alone, and both of them continually are associated with Aryaman. In many texts these three are spoken of as if they were all the Adityas, Mitsa noted in the day, Varana in the night. Mitsa is the bright blue sunlit day, Varana the starry, cloudless night sky. They differ from Dyaus and Aryaman in the absence of clouds. But in the latter developments of Hindoo mythology, when the heavenly bodies were supposed to float shipwise on an aerial sea, while this sea was inclosed with the world-surrounding ocean that had not been penetrated by man nor Varana, the god of the star sky, became the god of the ocean like the god Poseidon. The remaining pair, Amsa and Rhaja, are of much less note in the Vedas. There seems to be uncertainty in regarding Rhaja as a sun-god. I would regard Amsa as a moon-god, as being the nearest twin brother of the sun. The great sun-god, however, is never mentioned by name.

LONDON, G. B. J. G. FLEAY.

THE ANCIENT DATES IN THE HISTORY OF SOUTH AMERICA.

Translated by Rev. WENTWORTH WEBSTER, Basses Pyrenees, France.

The only region in South America which has a continuous history is that of which the present State of Peru is the centre. The one incontestible early date in the history of Peru is the arrival of Francesco Pizarro at Guayaquil. There he heard of the empire of the Incas, and resolved to conquer it. This was in 1524 under the Inca, Huayna-Capac, who died the following year. According to information which seems incontrovertible, and which results from the chronology established by Velasco, the most trustworthy historian of these countries, the sum total of the regnal years of Huayna-Capac (fifty years) and of his two predecessors, Tupac-Yupangui (thirty-six years) and Yupangui the Great (thirty-nine years), forms a total of one hundred and fifteen years; so that the duration of the so-called government of the Incas, during which Peru was under a despotic communism begins in the year 1410 of our era.

We remark that beyond this date we fall into a mythological period which includes two or three personages who are merely personifications of ideas. The first, dating backwards, is a so-called Pachacetec, whose name signifies jubilee, or a chronological century. The second, called Viracocha recalls a certain

divinity, or rather a divine manifestation which became incarnate in one of the Incas. Garcilasso de la Vega attempts to group round these names some events, which are far from filling up the one hundred and ten years which he attributes to them. The first, at least, of these two names must be suppressed, as has been already done by Balboa, Oliva, and even by Montesinos. There still remain seven Incas whose reigns give a total which carries us back to the year 1257 of our era, the final date of the pretended reign of Manco-Capac, who himself is but an allegory of the period of formation. Such is the true duration of the dynasty of the Incas, and this is proved by various lines of arguments.

The most important of these sovereigns is Mayta-Capac who, in the year 1230, made the conquest of the country of the Aymaras, that is to say of the chain of mountains called the *Sierra*, which extends to the south of the valley of Cuzco; this is the seat of government. This chain which contains the highest mountains and plateaux of the new continent, has in its center the celebrated Lake of Titicaca, whence the Incas claim their origin, and the islands of which contain their principal monuments. To the south of this lake, in the most elevated part of the plateau, the army of Mayta-Capac found the ancient city of Tiahuanaco which the few inhabitants of the country asserted had been abandoned for 150 years; this takes us back to the date 1170, long anterior to the establishment of the kingdom of the Incas. Cieza de Leon, a young scholar whom Charles V had ordered to make a journey of exploration in the territories of the Incas, visited Tiahuanaco about 1545, and he found there the tradition still existing of the expedition of Mayta-Capac, and even of the impression which these monuments had produced on his companions.

The first observation to be made is that the works had been suddenly interrupted by some unknown catastrophe, for the buildings have remained unfinished, and many blocks of stone are only half cut; but no one, either at that epoch, or since, has been able to tell who were the artisans. In the journey which he made in 1833, Alcide d'Orbigny re-discovered these ruins in the same condition in which Cieza de Leon had described them. The publicity given to these discoveries excited the cupidity of the countrymen of Bolivar, to whom the ruins of Tiahuanaco now belong. They were used as a public quarry whence the government of Bolivia extracted materials for the construction of churches, and private persons for their houses. Statues were easily pared down and formed into rollers for the fabrication of chocolate. Never has barbarism caused so much destruction as the pretended civilization of these degenerate descendants of the Spaniards. In 1846 Castelnau could still see a part of these remains, but in 1873 Squier found only those

left the size of which had happily defied the skill of the workmen of the country. If there still exist two colossal statues, two great monolithic doors, and some enormous sculptured blocks, it is only because these masses resisted all the attempts of the inhabitants of La Paz to blow them up with gunpowder. It is evident that this people are descendants of a country which was colonized by the Vandals.

Squier, when he saw what remains of these ruins of Tiahuanaco, was transported with the greatest enthusiasm. This celebrated traveler, who had visited all the curiosities of the New World, did not scruple to explain that these remains are superior to all else that America possesses, and perhaps, adds he, to the most admired remains of the whole world. This is going a little too far. Nevertheless, we may grant that the buildings of Tiahuanaco were the finest of all America, and that the masonry is as perfect as anything that can be found elsewhere. It is a mistake to attempt to compare this masonry and these methods of construction with those of Greece, Etruria and Rome. The Greeks employed generally a method which consisted of squared blocks of white marble, fitting perfectly without mortar, and joined together on the inner side by clamps of copper. At Tiahuanaco they are not squares but great blocks, usually sculptured in intaglio, a practice absolutely unknown to the Greeks. It is true that mortar is replaced by clamps; but in addition the superposed blocks are bound together by a bar of copper, which is let in vertically to the whole height of the wall. The Etruscans and Romans built with equal and symmetrical blocks, and they employed cement or mortar to bind them together. On the contrary, at Tiahuanaco the blocks are of the largest possible dimensions, cut at a very acute angle, and laid immediately one over the other without the least trace of cement. Lastly, there is one special characteristic of these buildings, it is the employment of piers, not as with us formed of pillars built up, but monoliths, each side of which is cut out to receive the head of the nearest block, which fits into it like a tenon in a mortise. This system of construction is absolutely unique, and resembles none of the classical methods already pointed out, and still less those more ancient methods of the Pelasgians, the Phœnicians and the Egyptians.

The great difficulty is to know whence came the builders and the materials of these monuments. It is useless to seek in a southerly direction; all our attention will be directed to the north, from the shores of the Lake Titicaca to Mexico. The materials are not found on the spot; they do not exist there, but are met within quarries either to the west of the Lake Titicaca, or on the shores of the Lake Umayo which is in the same district. This first indication may put us on the right track; but it does not tell us who were the marvellous engineers who

knew how to transport in one block the wonderful pieces which contemporary savages are quite incapable of lifting, and who have covered them with sculptures so delicate that we really know not with what style of art the bas-relief of the principal door of the temple can be compared. What was the object of the building of Tiahuanaco? What use could all this be put to? Situated at 4,200 metres given by Markham 12,156 meters (13,779 feet 6 inches). Tiahuanaco is uninhabitable for six months of the year; it is therefore a dream to seek there the capital of an empire of the Aymala which has never existed. and the capital of which, in any case, would be found in the habitable regions to the west of the lake, and particularly at Hatum-colla, which was in fact the capital of a district. We must acknowledge then that Tiahuanaco was but a place of pilgrimage resorted to in the summer season only. It results therefore that the suspension of the work, and the abandonment of the locality are not the issue of a simple conquest or of a displacement of political power, but are doubtless the consequences of an invasion of barbarians which rendered the country henceforward uninhabitable. It is necessary at once to clear up this important point.

Since the voyage of circumnavigation of Dumont d' Urville, in 1839, the identity of the inhabitants of Polynesia (the Archipelagos of Gambier, and the Society Isles), with those of the southern point of South America, who are known under the name of Patagonians, has been admitted by all. From certain indications, which we cannot dwell upon here, it may be supposed that the emigration would date back to 600 years before the above cited date; and by straining the calculations a little we arrive very near to the date of the abandonment of Tiahuanaco. Now, among the traditions of Peru, there was a memory according to which the Peruvians formerly inhabited Tucuman, and the banks of the River Pilcomayo, whence they had been expelled by an invasion of barbarians. The fact is so much the more probable because the Peruvians are of the same race as the Araucanians who anciently possessed Chili, and who now inhabit the southern parts of the Cordillera. Relating to this tradition, Santa Cruz Pachacuti, the national historian, but a fervent Catholic, has thought himself bound to make it coincide with the commencement of our era, in order to give an opportunity of identifying the Apostle St. Thomas with the mythical personage Tounassa, whose history M. Castaing has related in the legend of the white man. (*Archives of the American Society.*) In his opinion the abandonment of Tiahuanaco is connected with the retreat of the Peruvians, or more correctly of the Quichuas, driven out of Tucuman by the Patagonian Theuelches and others, and who took refuge first on the shores of Lake Titicaca, and afterwards in the valley of Cuzco.

The true Aymalas had, however, preserved the western shore of the lake. Their city and their buildings have no connection with those of the Incas, or even with those of Tiahuanaco. Certainly the Aymares have always been skillful masons, and it is beyond doubt that they were the artisans who made the best works of the Incas, but their monuments have an entirely distinct character. We do not speak here of the *Chulpas* or tombs raised high above the ground; a description has been given of them by M. de Sartiges, minister of France, and by M. Castaing (*The Architecture and the Arts of the Ancient Inhabitants of Peru*) at the International Congress of Ethnographical Science in 1878. There is nothing like them, either in Peru or elsewhere, unless it is perhaps in the country of Tunis.

Our attention is particularly attracted to the collection of monuments united in the peninsula of Sillustani, bathed by the waters of the lake of Umayu. Squier does not hesitate to declare that what he calls the Sun circle of Sillustani is "so like the Sun circle or Druidical circle of England, and of several other countries of northern Europe and of Asia, that the difference can hardly be distinguished." Such is not the opinion of M. Castaing. The stones of the Cromlechs are isolated and are fixed directly in the earth; whilst those of Sillustani are joined together so as to form a wall, and they rest upon a foundation of masonry. In any case, they resemble nothing in Peru or in America, and they do not give the key to the origin of Tiahuanaco.

Going northward we find in the neighborhood of Guayaquil and of Quito the ancient kingdom of the great Chimu, which is entirely covered with constructions of a different character from those of Peru. We meet there with enormous tumuli pierced with burial caves, sometimes divided according to sex and age; with immense palaces only the foundations of which remain; with prisons which are a model of the cellular system; with halls entirely covered with inextricable labyrinths, with a facing of stucco reproducing the designs of mats and shawls; with vaulted chambers which were incrusted with ornaments of gold and silver. All these wonders were the products of an art which had its centre in these districts, and which seems to date back to the Xth Century of our era. In fact, according to the information gathered by Velasco, the kingdom of Quito, and of the great Chimu had lasted 550 years, that is to say, from 925 to 1475, the epoch of their annexation to Peru. These works were attributed to a race of men from the north and who were called Caras, and who had wandered for about 200 years before fixing themselves. We must then place the first appearance of the Caras about the middle of the VIIIth century of our era; their earliest work consists of the wells hollowed in the rocks which are still to be seen at Point St. Helena to the east of

Guayaquil. We know that the word Cara signifies man, and by extension, warrior; some attempted to derive Caribe, and Guarani from this word, although there is no evident relation between these races and the Caras. The Peruvian traditions represent these latter as formidable giants, vicious, but skillful artists, especially in cutting the diamond.

To resume the study of the Peruvian regions furnishes the following dates:

	Arrival of the Caras, artists and builders	VIIIth Century.
Markham's	Establishment of the Kingdom of Quito	Xth Century.
dates are.	Abandonment of Tiahuanaco	XIIth Century.
1021	Commencement of the period of Manco-Capac	
1062	Foundation of the Empire of Incas by Sinchi-Rocca,	1257
1162	Expedition of Mayta-Capac to Tiahuanaco	1320
1400	Communistic organization of Titu-Yupanqui	1410
1526	Death of Huayna-Capac	1525

All the other dates of South American history depend more or less on these, whose exactness has just been established above.

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MARVELOUS CURES AT EPIDAURUS.

Epidaurus was the most famous seat of the worship of Æsculapius in antiquity, and it was thither that the Romans during the third century B. C. in time of pestilence sent an embassy to convey the god to Rome; and from the same ancient seat the rites were carried to Pergamus, Cyllene, and many other points. Strabo (378) says that the temple is always full of suppliant invalids and of consecrated tablets upon which the cures were inscribed; and to the latter custom Pliny attributes the foundation of medical science. Pausanias, in the second century of our era, has the following note (ii. 27):

"Within the precincts (of the temple at Epidaurus) there stand six slabs (they were more numerous in former days), upon which are inscribed the names of men and women who have been cured by Æsculapius, and the malady also with which each suffered, and how they were cured. The inscription is in the Doric dialect."

These stelæ differed from the ordinary tablets erected by individuals, as may be inferred from these passages; and we

now know that they contained a collection of many individual records of former years, probably renewed by the priests from tablets going to decay, or from the traditions of the temple, if some were not manufactured.

In previous numbers of the ANTIQUARIAN, mention has been made of the excavations which the Archæological Society, of Athens, was conducting on the site of the temple at Epidaurus. In the last number of their Ephomeris for 1883, the account of their discoveries is continued by P. Kabbadias, who has charge of the work. As they were digging about seven metres from the north wall of the temple they came upon a long building, in which they hit upon the wall of a mediæval house. On taking down this wall they found more than twenty pieces of inscribed slabs built into it, nine of which, on being fitted together, formed a slab nearly complete; the others also fitted together, but did not supply the whole, and the inscription is accordingly withheld from publication at present, in hopes that it may be completed by further excavations. The entire slab on being read was perceived to be, beyond doubt, one of the very stelæ referred to by Pausanias. It records about twenty marvelous cures, nearly all of which are furnished with a short caption to indicate the subject-matter. The record is so unique and opens so fresh a page in ancient life, that we do hot hesitate to give it nearly entire. It may be classed as one of the rare cases in the desert-land of inscriptions. Its dialect is Doric as Pausanias said, and its language is simple and natural in the extreme. Some of its pictures are idylic in their vividness and simplicity, and the whole may be ranked as a production of no mean literary merit:

"GOD. GOOD FORTUNE.

"CURES PERFORMED BY APOLLO AND ÆSCULAPIUS.

"Cleo was with child for five years. This woman being now with child five years came to the god as suppliant and slept in the Abaton (Temple Dormitory), and as soon as she had gone forth from this and the temple grounds, she gave birth to a boy, who immediately washed himself in the fountain and walked about with his mother. Meeting with such good fortune she had inscribed upon her offering:

"'Not at the size of my tablet wonder, but more at the marvel. Cleo for five long years was bearing the weight of her burden. Till in the temple she slept, whence as mother she went.'

"A three years' child. Ithmonike of Pellana came to the sanctuary for offspring, and when she lay down to rest she saw a vision. She thought she asked the god that she might become pregnant of a daughter, and Æsculapius replied that she should be so, and if there was anything else she desired it should be granted her; but she answered that she wished noth-

ing more. Afterwards having obtained her prayer, she carried the child for three years, and finally went to the god as suppliant for delivery. On lying down to sleep she saw a vision; she thought the god inquired if she did not have all she had asked for, for she had said nothing about delivery, although he had asked if she wanted anything else and said he would grant it; but now as she had come at last as suppliant for that, he promised that it should be with her as she prayed. Going out then from the Abaton, as soon as she was without the sacred grounds she gave birth to a daughter.

"A man with the fingers of his hand paralyzed, except one, came to the god as suppliant; but on seeing the tablets in the temple he became skeptical of the cures and ridiculed the inscriptions. However, he lay down to sleep and saw a vision. He thought that he was playing dice in the temple, and as he was about to make a throw the god leaped upon his hand and straightened out his fingers. When the god had stepped off, he seemed to bend his hand together himself, and then extend his fingers one by one. When they were all straightened out, the god asked him whether he still disbelieved the inscriptions on the tablets in the sanctuary. 'No,' he replied. 'Well then, fear not because you were incredulous before; that you may have faith for the future, be it unto you as with the believing.' At day break he went forth whole.

"One-eyed Ambrosia from Athens. This woman came as suppliant to the god, and while talking about the temple, ridiculed some of the cures as incredible and impossible — that the blind and halt should be cured simply by being visited by a dream; but on lying down to rest she saw a vision. She thought that the god stood by her and said that he would indeed cure her; but in return she must consecrate in the sanctuary a pig of silver, as a memorial of her stupidity. Saying this, he parted the eye that was diseased and poured in some lotion. At day-break she went forth whole.

"A dumb boy came to the sanctuary as suppliant for his voice. When he had performed the initiatory sacrifices and done all that was customary, the attendant of the god, looking at the father of the lad, said, 'Promise within a year, if you obtain that for which he is present, to offer the proper sacrifices for the cure.' Suddenly the lad exclaimed, 'I promise,' and the father in astonishment bade him speak again. He did speak again, and from that time was cured.

"Pandarus, a Thessalian, having letters branded on his brow. This man when asleep in the temple saw a vision. The god seemed to him to tie his own fillet over the brands, and to bid him when he is out of the Abaton to take off the fillet and consecrate it in the temple. Day dawning, he awoke, removed the fillet, and found his brow cleared of the marks. The fillet he consecrated in the temple.

"How Echedorus received the letters from the forehead of the same Pandarus in addition to his own. This man having received money from Pandarus, to make an offering to the god, went to Epidaurus on behalf of him who had given him the money, and in his sleep saw a vision. The god seemed to stand by him and ask if he had any money from Pandarus. If so, he should deposit it as an offering in the temple; but he denied that he had received any such thing from him. However, if the god would make him whole, he would get a likeness of him painted, and consecrate that. Then the god bound the fillet of Pandarus upon his brands, and bade him when he was gone forth from the Abaton to take off the fillet, wash his brow in the fountain and look into the water. When day came, he went forth from the Abaton, took off the fillet, from which the letters had now vanished, looked down into the water and saw that his brow had acquired the brands of Pandarus in addition to his own.

"Euphanes, a boy of Epidaurus. This one slept in the temple because he was a sufferer from the stone. The god seemed to him to stand by and say, "What will you give me if I make you whole?" He replied, "Ten dice." The god burst out laughing, and vowed he would cure him. When day came, he went forth sound.

"A man came to the god as suppliant, with one eye so far gone that it had eyelids only and nothing beneath them but the empty sockets. Now some of those in the temple spoke of his folly in thinking that he would receive his sight, when his eye had no existence whatever, only a cavity. However, a vision appeared to him in his sleep; he thought the god boiled some kind of a drug, and then drawing his lids apart poured it in. At daybreak he went forth with his eyesight completely restored.

"A drinking cup. A slave carrying his master's baggage was journeying to the sanctuary. As he was approaching the Dekastadion, he fell down, and on arising opened his pack and looked at the shattered articles. When he saw that the cup with which his master was accustomed to drink was broken, he was in great distress, and sitting down began to put the shards together. Thereupon a wayfarer, observing him, exclaimed, 'You unlucky fellow, why are you trying to put that cup together so fruitlessly? For not even Æsculapius or Epidaurus could make that whole.' Hearing this, the slave put the pieces together into his pack and proceeded to the temple. When he had arrived he opened the pack, took out the cup, and found it whole. He told his master all that had been said and done, and the latter, on hearing it, consecrated the cup to the god.

"Aeschines, after the suppliants had already gone to rest, climbed a tree and peeped over into the Abaton; but losing his

balance he fell from the tree and struck his eyes upon some palings. Being badly injured, and becoming blind, he went to the god as a suppliant, and after a night's sleep was cured.

"Euippus carried a lance-head six years in his jaw; but when he had fallen asleep in the temple, the god drew out the lance-head and placed it in his hands. At daybreak, he went forth with the lance-head in his hands.

"A man of Torone that had leeches. This man saw a vision in his sleep. It seemed to him that the god, having cut open his breast with a knife, took out the leeches, gave them into his hands, and then sewed up his breast again. When day came he went forth with the creatures in his hand, and was cured. He had swallowed them by a device of his step-mother, who had put them into a porridge for him.

"Hermodicus, of Lampsacus, paralyzed in body. The god cured this man while he slept, and commanded him, when he went out, to carry as large a stone as he could to the sanctuary; and he brought the one that lies in front of the Abaton.

"Nicanor, who was lame. As he was sitting still in the day-time, a seeming youth snatched away his staff and fled. Leaping up he gave chase, and from that day was cured.

"A man had his toe cured by a serpent. This man, suffering severely from a tormenting ulcer in his toe, was brought out at daybreak by the attendants and placed upon a seat. Thereupon sleep fell upon him, and a serpent issuing from the Abaton, healed his toe with his tongue, and when he had done this he glided back again into the Abaton. The man was cured when he awoke, and declared that he had seen a vision; he thought that a young man of beauteous form applied an ointment to his toe.

"Alcetas, of Halice. This man being blind had a vision; the god seemed to him to approach and open his eyes for him so that he saw the trees in the precinct plainly. At daybreak he departed whole.

"Heræus, of Mytilene. This man had no hair on his head, but abundance on his chin. Feeling ashamed because others ridiculed him, he went to sleep in the temple, and the god anointed his head with a preparation and make his hair grow.

"Thuson of Hermione, a blind boy, had his eyes licked in the day-time by one of the dogs about the temple, and departed cured."

In all these cases the cure is produced at once by the appearance of the god in a dream, or through his agents. The serpent is the universal, the dog a common emblem of this deity. His justice may punish the wicked, as in Aristophanes; but his forgiveness is ever ready to the unbelieving and the foolish. He enjoys a joke with a keen zest, and well deserved his epithets of "the kindly," "the gentle," "the philanthropic,"—char-

acteristics which are imprinted upon his features in art, where he is usually represented as a bearded man, rarely as a youth.

The cures recorded upon our tablet, then, are all miraculous faith-cures, and must have acted powerfully on the imaginations of the invalids as they were read day after day with longing hopes. It is commonly stated that the patients came to learn the proper remedies from the god in dreams, so that these might be applied afterwards. That seems to represent a stage more rationalistic when the miracle was hardly looked for. In our tablet the age is one of miracle only, and the natural inquiry arises, when were these cures performed. The epigraphic evidence of the stone itself points to the third century B. C. as the approximate date of its inscription, but Kabbadias cites from Hippys of Rhegium, the historian who flourished about the fifth century, a story which is also found related upon the second tablet mentioned above; and Pausanias (ii. 361) speaks of a town Halice, near Hermione, which was utterly deserted in his day, but he proves its earlier existence by citing "the Helicean story" which he had seen on a slab at Epidaurus — the veritable slab which we now possess, and Alcetas is the person involved.

All this proves that the cures recounted in this slab, at least in the main, were handed down from a much more ancient period, though the age of faith cures is confined to no time nor country. Kabbadias adds another inscription from late Roman days of quite another class, resembling, in fact, those referred to by Pliny. A certain M. Julius Ppellas, of Mylasa, in Caria, recites the cure wrought in his case, which was a bad dyspepsia that attacked him at intervals. He "was often sent for by the god when the attacks came on," and while in Ægina on the voyage, was warned not to get into a passion, as dyspeptics are prone to do. When he arrived at the temple the remedies were prescribed to him in his dreams, and he followed out a regular course of diet and exercise. At the outset he is required to lie covered up for two days, probably fasting. Before his meals he is to eat bread and cheese, celery and lettuce. He must bathe himself without the assistance of the attendant, though he must pay him his fee; he must exercise running, take bits of citron steeped in water; use swings in the gymnasium, sand in wrestling; walk about without sandals before going to the bath; pour wine into the warm water for bathing, and take milk with honey. One day when he drank it without the honey the god reprimanded him, and insisted that he should use the honey to cut the milk. Finally, he must use salt and mustard, and for a headache gargle his throat with cold water. After pursuing this course for some ten days, the god told him to set up this inscription in all gratitude, and he then departed a well man.

In reference to all these cures, it is proper to state that they were ridiculed in their day.

Aristophanes, in his comedy of Plutus, represents wealth as a blind old man who has been discovered by a certain Chremylus, and is led by his discoverer to the temple of Aesculapius at Athens, that his sight may be restored and he may be rendered capable of choosing his residence among honest men, instead of groping about as he usually does, and attach himself to any person he may chance to fall in with. The proceedings in the temple and the method of cure are minutely described by the slave who accompanied his master Chremylus on the service.

"In the first place," he says, "we took him down to the sea and gave him a bath. Then we went to the sanctuary of the god, and when we had offered our sacrifice of cakes and burned them on the altar, we laid Plutus down to sleep, as is customary, and we all spread our blankets near by."

"Were there any other suppliants of the god?"

"Yes, a certain Neoclides, who is blind, but outstrips all that have eyes, in cozening and cheating. And there were many others besides, with all sorts of complaints. But when the servant of the god had extinguished the lights and told us all to go to sleep, and if any one heard any noise he must keep still, we all lay down in due order. For my part, I was not able to go to sleep; a pot of porridge standing a little way from the head of an old woman murdered sleep for me, and I was seized with a holy longing to creep up to it. Just then, looking up, I espied the priest snatching off the cakes and figs from the consecrated table; and then he went round to all the altars to see if a single cake was anywhere left, and when he had made sure, he enshrined them all in his wallet. I, too, thinking there was a deal of sanctity in this sort of business, started for the pot of porridge."

"You dare-devil, didn't you fear the god?"

"Yes, indeed, lest he with his fillets and all might get to the pot of porridge before I did. For the priest had taught me a lesson. Now, the old woman, when she heard the noise I made, put out her hand, but I hissed like a snake and gave her a bite, so that she drew her hand back quickly and covered herself up again in great terror. I was not long then in making way with the greater part of the porridge, you may believe; but when I was full I darted back."

"But did the god not come to you?"

"Not just then, and when he did I covered myself up in fear, and he went about diagnosing all the cases with great precision. Next a boy set near him a stone mortar and a pestle and a small case."

"But how did you see all this, you rascal, when you say you were all covered up?"

"Why, through the holes in my blanket, and there was plenty of them, by Jove. Well, first of all he began to mix some salve for Neoclides, throwing in three heads of Tenian garlic; then he brayed some assafœtida and squills, diluting the whole with the sharpest of vinegar, and then rubbed it into the patient's eyes, turning back the lids to give him all the benefit. Neoclides, leaping up with an execration and a roar, tried to run away; but the god burst out laughing and said, 'Lie here now with your eyes well plastered, that I may cure you of your tricky obstructions in the Assembly.'"

"How patriotic and wise the god is."

"After that he sat down by Plutus, and in the first place he touched his head, and then taking a clean napkin wiped his eyes, and Panacea covered his head and his whole face with a red cloth. Then the god whistled and two large snakes darted out from the shrine, and creeping under the cloth licked his lids, as it appeared to me. And before you could swig ten cups of wine, Plutus rose up with his sight restored. I clapped my hands with joy and waked up my master, while the god disappeared within the temple and the serpents with him."

That this is intended as keen satire, especially upon priestly methods, and indirectly upon the wonderful cures attributed to the sanctuaries of Æsculapius, is easy to see; but it was hardly to be expected that after the lapse of some twenty-three centuries we should suddenly light upon a priestly memorial which not only would boast of such cures, but would point triumphantly to their testimony to silence all ridicule, whether from the Aristophanes of comedy or the Aristophanes of daily life.

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THE HILL TRIBES OF INDIA.

TRIBES OF THE NORTHEAST BORDER.

In our last article we began a survey of the Hill Tribes of India at the eastern extremity of the Assam valley, and thence turning north and west, skirted the foot-hills of the Himālayas until we found ourselves on the confines of Bhutan. There still remain to describe in this part of India some interesting tribes which had in like manner secluded themselves in the mountain

region forming the southern border of the valley. We also promised to speak of the tribes which had made their home in the lowlands, and had as a consequence given up many of their savage characteristics. Let us then cross the valley in a south-westerly direction, and mount the highland at the point where it overlooks the plains of east Bengal. This region, known as the Garo Hills, lies between 25° 57′ 18″ — 25° 9′ 20″ north latitude, and 90° 0′ 10″ — 91° east longitude, and has an area of 3653 square miles. Here has been settled from time immemorial the tribe which has given its name to the district, and which numbers about 100,000. A few thousands more have found their way down to the adjoining provinces of Goālpāra, Kāmrūp, and Maimansinh. The Garos are one of the most primitive tribes of the great Thibeto-Burman family, and belong to that branch of it called Kachāri. Since they are able to give no account of any migration to their present abode, and are shut in on three sides by an Aryan population, it seems probable that they were among the earliest settlers of India. Although the existence of the tribe and something of its character became known to Europeans in the last century by traffic with those who ventured into the plains, yet the people, as they were in their native hills, were imperfectly understood until the Government took charge of them in 1868. A military expedition into the hills in 1872-73 resulted in the submission of the tribe to British authority and the making of a complete survey of their country.

The Garos are divided into three sub-tribes — Atong, Abengya —Achik — and these into clans. In physical appearance they are decidedly unprepossessing. They are rather below the medium height, but stout, and capable of enduring great fatigue. They have high cheek-bones, eyes obliquely set, large ears, thick lips, little or no beard, and a dark, brown complexion. The clothing of both sexes is of the scantiest, consisting usually of a waist-cloth, a little larger for the women than for the men. A small blanket of cloth, made by beating out a species of bark, is sometimes carried in addition. The women are able to weave and dye their cloth, but it is of a coarse texture. What is lacking in dress is made up in ornaments, which are worn in profusion on all parts of the body. They are especially fond of piercing the lobes of the ears and enlarging the apertures by appending heavy weights. Should the cartilage be broken, it is considered a mark of beauty. Their homes are much like those already described in this region. They are usually built on a side-hill with an angle to the slope, being supported on props at the lower end, in order to keep the level. They are about fifteen feet wide and fifty to one hundred and fifty feet in length. The interior has one or more small apartments partitioned off as sleeping rooms for the girls and married people of the household,

but the space is chiefly in one large apartment where are the mud fire-places, and where most of the domestic operations are performed. The boys and unmarried men sleep in the *morang*, or bachelor's hall, which is also used for the transaction of public business. The Garo men spend their time in a rude cultivation of the soil, in which they are assisted by the women, in journeys to the market towns at the foot of the hills, in war and idleness. Their mode of agriculture is called *jhum*, and consists in clearing and burning a patch of jungle and seeding it in the ashes for a couple of years, when it is abandoned for another spot. The only instruments used are the *dao*, or hill-knife, an ax, a hoe and a sharpened bamboo stake for making the holes, into which the seed is thrown. The Garos are little skilled in the mechanic arts, being able to make, besides the coarse cloth mentioned above, a little rude iron work, some rough pottery and wicker baskets. They depend greatly upon barter with the people of the plains, giving cotton of an inferior quality, lac, wax, india-rubber and other jungle products in exchange for domestic animals, salt, weapons, and a variety of manufactured articles.

In former days war was an important part of a Garos' occupation, but the strong arm of government has done much to prevent the outbreak of disorders. In case one member of a clan is injured, all the other members take it up as a common insult, and unite to seek the life of the offender or of one of his relatives. If the aggrieved party is unable to get revenge, he hands down the grudge to his children, and thus feuds between clans are sometimes perpetuated for generations. The usual weapons are a spear, sword, bamboo shield, and a stock of *panjies*, or sharpened bits of bamboo, which are stuck in the ground to wound the feet of pursuers. The Garos are not nice about their food. Besides the usual domestic and wild animals, which are eaten skin and all, frogs and snakes do not come amiss. A dog fed to repletion with rice, and then killed and roasted, is esteemed a great delicacy. Milk alone is held unfit for use, as being an excrement of the cow. For drink rice-beer is swallowed in enormous quantities, and every house has its brew-tub. It has a pleasant, sub-acid flavor, and is mildly intoxicating Marriage with the Garos is generally an affair of inclination but is peculiar in that the maiden has the privilege of "popping the question;" for the young man to do so would be considered an insult to the girl's clan, to be atoned for by a generous feast, or even by blood. When proposed to, he is not at liberty to refuse; in fact all matters pertaining to a Garo marriage seem based on the superior rights of the female. The bridegroom is taken to the house of the bride with the same display of force and feigned reluctance which is elsewhere characteristic of the bride. The married couple live with the wife's parents,

and the husband becomes a member of her clan. In case a mother-in-law becomes a widow, her son-in-law is, under certain circumstances expected to marry her also! Children be long to the clan of their mother, and property always descends in the female line. The wife is practically the head of the family, is relieved by her husband of the heaviest drudgery, and enjoys much real consideration. Polygamy, though allowed with the consent of the first wife is not generally practiced.

When a Garo dies, his body lies decked out in his best apparel until the relatives have had time to assemble, when it is burned and the ashes are buried near by within a little bamboo structure. Within or near this are placed food and other articles for the convenience of the soul in its journey to the spirit land—supposed to be Chikmang, a high peak near the southeast corner of their country. It is a curious fact, noticed also in other parts of the world, that cooking utensils are first *broken*, thus causing them to pass into spiritual forms, in which way alone they can be used by the deceased. Dogs are killed to track out the path for the soul, and formerly in case the deceased was a chief, slaves were dispatched to attend their master. Bengalis were in great request for this purpose, and head-taking expeditions kept the people of the adjoining plains in constant alarm. A rude wooden effigy of the dead is set up in the verandah of the house, and some families can point with pride to long rows of these portrait mementoes of departed ancestors. If a man has been killed by a tiger, his shade sometimes appears to his relatives in a dream, urging them to change their names lest the tiger find them out. Some men have the power to change themselves before death, into the form of a tiger or other animal.

The Garos are said to believe in a Supreme Deity, whom they call Saljang, and who manifests himself in the sun. They do not trouble themselves to worship him, since he is too benevolent to require propitiation. Their chief concern is to keep the peace with a host of minor spirits, to whose capricious will they owe their good and evil fortunes. They have no temples nor images of their gods, but before each house bamboo poles are set up, to which are tied fillets of cotton or strips of cloth, before which they worship. Similar objects are stuck along the foot-paths in order to frighten away demons. Their worship consists in the presentation to the spirits, of pigs, fowls and other domestic animals, the flesh of which is afterwards eaten by the villagers. The Garos have priests, but the office is not hereditary, and may be assumed by anyone who has the requisite gifts. The duties of the priest are to perform certain rites at births, weddings, and other festivities, but especially to act as physician; for, since all sickness is due to the possession of the

sufferer by some demon, exorcism is the only rational means of cure.

The Garo language, of which there are several dialects even within this limited area, structurally considered, lies on the border between the monosyllabic and agglutinative divisions of speech, and deserves attentive study. It has never been written by the people themselves, but has been printed in both Roman and Bengali characters by missionaries for translations of the Bible and other religious works. The language has adopted many Aryan words, which is not strange, considering how closely the Garos are invested by an Aryan population. We have a brief grammar by Keith, and a Garo-English dictionary. The Garos bear in general a high character for frankness and truthfulness, so far as they have not been corrupted by intercourse with the people of the plains. Their oaths are taken with peculiar solemnity, and are seldom broken.

Following the border ranges directly eastward we come to the district known as the Khasi and Jaintia Hills. Its limits are 26° 9′ 30″—25° 8′ 28″ N. lat. and 91° 9′—92° 51′ 30″ E. long., and its area is 6,157 square miles. It contains a population of about 170,000 souls according to the census of 1881. The western part of the district is occupied by the Khasias, while the Jaintia Hills are the home of a closely allied people called Syntengs. The characteristics of the two tribes are so much alike that one description will suffice for both. Physically, they exhibit the Mongolian type — the flat face, tawny complexion, high cheek bones, oblique eyes, and scanty beard. They are small in stature, but stout, and have an extraordinary development of the knees and calves. The Khasias can give no account of their primitive history, save the tradition that they once dwelt in the plains, and were driven to the hills by some convulsion of nature. They first became known to Europeans when the East India Company acquired the sovereignty of Bengal in 1765, but did not in any way become subject to British authority. It has been about fifty years since they came directly or indirectly under foreign restraint. The whole of the Jaintia and a part of the Khasi Hills are now British possessions; the remainder is broken up into petty democracies, each governed by a chief, who is appointed by election, but always taken from the same family.

The Khasias are not remarkable either for intelligence or energy, and have made little progress in the useful arts. They have no fixed standards of measure, and distance is estimated by the number of *pān* leaves chewed, each lasting about half an hour. Their dress, though rather more ample than that of the Garos, is not woven by themselves. The houses of the poorer classes are built with stone, mud, or plank walls and thatched roof; while those of the well-to-do are more solidly constructed,

and provided with plank floors and a few conveniences in the way of furniture. Marriage, which is postponed to adult age, is contracted with little ceremony save feasting, and is as readily dissolved. The want of issue is a common ground of divorce, which is effected by the exchange and throwing away of five cowries in the presence of witnesses. The husband usually lives with the family of his wife, and all property acquired by him in wedlock belongs to her. The laws of inheritance are somewhat complicated, but it may be said in general that property descends in the female line. This and the like custom among the Garos remind us of the law among polyandrous tribes in other parts of India. After death, the ashes of the children and mother are buried in the spot belonging to her clan, while the remains of the father repose apart in the ground of his ancestors. The Khasias, after burning the dead, deposit the ashes under a broad flat stone supported stool-like on short pillars, or erect rough monoliths to preserve the memory of the dead. This singular custom, which does not occur elsewhere in Assam, is exactly reproduced among the Hos of Central India, and raises the suspicion that there may have been some ancient connection between the two tribes.

The religion of the Khasias is of the simple type already described, but shows the influence of Hindu ideas. They make much of incantations and sacrifices to avert calamities, and are particularly fond of divining by the contents of eggs. They believe in a future life and in the transmigration of souls, though these doctrines do not seem to affect conduct. The language of the Khasias and Syntengs, of which there are several dialects, differs so much from surrounding tongues that it has been provisionally set in a family by itself. It is essentially monosyllabic with a tendency to agglutination. Grammatical relations are indicated for the most part by the simple juxtaposition of words, each of which has an independent use and meaning. It recognizes masculine and feminine, but no neuter gender. The language has no literature, nor written character, but Roman and Bengali type has been used to print translations of the New Testament and elementary books into Khasi. We have a small but very acceptable grammar with reading lessons and vocabulary by Rev. W. Pryse, Calcutta, 1855; and it is understood that a Khasi-English dictionary is in preparation.

Crossing the Kapili river, which forms the eastern boundary of the Jaintia Hills, we enter the country of the Nāgā tribes, which spread over the remaining border land as far as the eastern extremity of Assam. Before describing this large and interesting people we will speak briefly of two less important tribes which have found homes on their western borders,

The Mikirs are settled among the low hills along the Kapili, on the northern side of the highland. They are peaceful in dis-

position and resort freely to the valley to trade. They have a fine physique; but are somewhat lacking in courage, and stand in dread of their neighbors. Their houses are built upon platforms, ten or twelve feet above the ground, and are reached by notched poles or ladders, which for greater security are drawn up at night. Their religion is Pagan, but infected with Hindu ideas. They are excessively superstitious, and when unable to overcome the visitations of disease by the usual offerings, they are wont to forsake everything and flee to the jungles.

The Kukis, who occupy nearly the same region but farther to the south, are the only fragments of a large and powerful tribe or series of tribes, extending through Kachar and Manipur down into British Burmah. They wear little clothing and are exceedingly filthy in habits. They are great smokers, and like some other tribes, are fond of sipping the oil of tobacco which collects in the bottom of the pipe bowl. They have hereditary chiefs to whom they yield obedience. Their notions of a future life are unusually clear. It is a state where men are rewarded according to their deeds. The angel of death conveys the souls of the good, to the gods, where they have every enjoyment; while the souls of the bad are subjectected to the worst tortures which their imaginations can devise.

The Nāgās not only are the most numerous and wide-spread of the rude tribes of Assam, but they excite our interest on account of their manly qualities. Their country stretches from southwest to northeast between the 93d and the 97th degrees of east longitude. The western portion, where the hills approach nearest the Brahmaputra, is known as the Nāgā Hills district, and is under direct British control. The tribes farther east are more independent, and their country has never been carefully surveyed. The name Nāgā has been variously derived from the Bengali *nangta* 'naked,' the Kachari *nāgā* 'young man,' 'warrior,' or from the Sanskrit *nāgā* 'snake,' thus connecting them with the serpent worship, once so prevalent in India. No precise statement can be made of the number of the Naga tribes, but it is said to be not less than thirty, all of whom speak dialects, and perhaps we ought to say languages, mutually unintelligible. This diversity of speech, existing sometimes among tribes, not more than a day's journey apart, is quite remarkable; and is doubtless in part owing to the broken character of their country, and in part also to the state of perpetual warfare in which they live. It should be said, too, that since the name Nāgā is not used by the people themselves, but was first applied to them by the Assamese, it may include tribes of different ethnic connections.

In the present state of our knowledge, any classification of these tribes must be regarded as provisional. Lieut. Col. R. G. Woodthorpe, than whom no one has enjoyed better opportuni-

ties for studying the Nāgās, divides them into Angami and eastern or kilted and non-kilted Nāgās. The late G. H. Damant, who met an untimely death at their hands, classed them as Western, Middle, and Eastern Nāgās. In general, it may be said that the tribes lying beyond the Doyang river, about the 94th degree of east longitude, exhibit a likeness to the Singphos and their kindred farther east, while those west of that river are more naturally connected with the savage population of the mountains to the south of them. The Western Nāgās occupy a more restricted area than the Eastern, their country lying between the Kapili and Doyang rivers (93rd to 94th degrees east longitude). The principal tribes are the Rengma, Kachar, and Angami. The Sema and Lhota tribes lie near the Doyang, and are the connecting link between the eastern and western divisions of this people. The Angami are the most powerful and warlike of the western tribes, and have long been a terror to their neighbors. The British government has recently established a post in their midst at Samaguting, which has had some effect in repressing their marauding habits.

The Nāgās have complexions of every shade of brown, flat, lozenge-shaped faces and small eyes. Their stature is rather above that of other tribes, and they have a powerful muscular development. The Angami are distinguished from their eastern brethren by ampler clothing, serving all the purposes of decency. Their villages, consisting of twenty to several hundred houses, are built on the most inaccessible spots, and are fortified with great care and considerable engineering skill. The sides of the hill are scraped and thickly planted with *pangies*. The village is surrounded with a wall and ditch, and the only approach is by a covered way wide enough for one man at a time to pass through. This is close by a heavy wooden door flanked by a watch-tower, where a sentinel always stands in time of war. The houses are about 50 by 30 feet in size, with ridge sloping down in the rear and eaves nearly touching the ground at the sides. The space is divided into two rooms, an inner one where the family sleep and the grain is kept, and an outer one where the cattle are housed and the cooking is done. In the house are also stored in baskets and on shelves, quantities of skulls and bones, trophies of the prowess of the present owner and his ancestors. The Nāgās do not marry young, since no male is allowed to choose a wife until he is able to make her a bridal gift of the skull or scalp of a foe, and has also submitted to the process of tatooing, with which these people greatly disfigure their bodies. They are satisfied with one wife, who is expected to do all the hard work, but is otherwise well treated.

We have little definite information regarding the religion of the Nāgās, but it seems to consist chiefly in propitiatory offerings to malevolent spirits. They make much of omens, and

when about to start on an expedition, often cut a soft reed into slices, and judge of the probable result by the way the slices fall. In disposing of the dead, the body is taken from the village and suspended from a tree in a boat-like coffin until it has wasted away, when the skeleton is brought back and funeral ceremonies are held. These consist of dancing, feasting, and passionate denunciation of the demon who carried off the spirit of the deceased. At the conclusion, the remains are burned, buried, or preserved in little wooden structures, according to the custom of each tribe. The Nāgās have no hereditary chiefs nor organized system of government. When convened in assembly, some influential man is chosen as spokesman, and the elders advise regarding the interests of the tribe; but no authority is vested in either party. The punishment of injuries is left to the parties most concerned, and the fear of revenge seems to act as a powerful restraint upon disorder. The principal tribes of Eastern Nāgās are, from west to east, the Hatigonia, Tablung, Joboka, Bardwaria and Namsangia. They differ in a marked degree from the western tribes, in the scantiness of their clothing. In some tribes the men — less often the women — wear no clothing except their head, or metallic ornaments. In others, the young men assume a loin-cloth at marriage. In other respects the general description of Nāgā customs above will serve for all the tribes, though there are numerous variations in details.

We have now come around to the point whence we started on our survey of the tribes living on the border of the Assam valley. We are strongly tempted to descend the southern slope of the highland and visit the kindred tribes whose home is in the mountains south of Assam, but this would lead us too far at present.

It only remains to say a few words concerning the non-Aryan tribes of the valley, who have not refused intercourse with their Hindu conquerors, and have for the most part adopted their civilization. Passing over some inferior tribes, or sub-tribes, we shall notice the Ahams, Chutias, Lalangs, Koch, Mech and Kachari. We have already (p. 101), spoken of the Ahams. They are found in all parts of the valley, but chiefly in the eastern portion. They number about 150,000, and are not distinguishable, except in features, from low-caste Hindu. The Chutias are supposed to have entered Assam from the northeast, but at what time is not known. They became for a season the ruling power, but were driven from lower Assam by the Koch, and in upper Assam were reduced to subjection by the Ahams in the thirteenth century. They early gave up their language and primitive customs. A fragment of their speech is thought to have been preserved by a little colony in the district of Lakhimpur, who call themselves Deori Chutia. The

Chutias now differ so little from Hindus in physical traits that their non-Aryan origin has sometimes been questioned. They number about 50,000, and are found mostly in upper Assam. The Lalangs, whose home is in the Nowgong district, are closely allied to the Kacharis, and number about 35,000. They have in part adopted Hindu customs, but are said to have retained their language, though using Assamese freely. The Koch are one of the most important of the tribes, early invading Assam. They are found in all parts of the valley, and spread westward into Bengal where they are represented in the little kingdom of Kuch Behar. They number not less than one and a half millions, the greater part of whom have adopted Hindu usages. A remnant, amounting to 10,000, and living at the foot of the Garo Hills, still retain their ancient customs. The Koch entered Assam from the west, and founded a powerful kingdom, which lasted several centuries, but was finally overthrown by the Muhammadans in the west and the Ahams in the east. The Koch are remarkable for their very dark complexion, differing in this respect from the other tribes of the valley. Their ethnic connections and early history are buried in obscurity. Col. Dalton regards them as an offshoot from the Dravidian stock, driven out of the Ganges valley by advancing Aryans. Others have connected them with the Negritos. The Mechs and Kacharis are closely allied branches of a great people who early spread over lower Assam and eastern Bengal. They have a lighter complexion and more marked Mongolian features than the Koch. Some of the Kacharis have become completely Hinduized, and have settled down to agriculture in the plains. A large portion prefer a home among the low hills at the edge of the valley, where they lead a nomadic life, and preserve with greater or lesspurity, their primitive beliefs. The Mechs singularly cling to the marshy and fever breeding jungles at the foot of the mountains, which by long habit have become more salubrious to them than the open plains.

We have now described the most important of the non-Aryan tribes of the northeastern frontier of India. Hasty and imperfect as our sketch has been, we trust that enough has been said to show that Assam presents an extensive field of almost virgin soil for the labors of the scholar. Here one can study religious beliefs, social and civil institutions, under most primitive conditions; and especially the great diversity of languages, which we have observed, cannot but furnish valuable illustrations of the laws which govern the development of human speech, whenever they shall have been attentively studied.

BOWDOIN COLLEGE, Brunswick, Me. JOHN AVERY.

ANCIENT EARTHWORKS IN ROCK COUNTY, WIS.

READ BEFORE A SOCIETY AT MILTON, WIS.

In presenting to this body the results of some investigations made during the fall of 1874, among the mounds at Indian Hill and at the foot of Koshkonong lake, I naturally feel much embarrassment. My very limited acquaintance with the sciences of Archæology and Ethnology, will necessarily confine me to a simple presentation of facts and things as they came under my observation, leaving you to draw therefrom your own conclusions. A small party, composed mostly of students, under the direction of Pres. W. C. Whitford, of Milton College, were engaged in the work, spending in all about five days. The first works examined are situated on sections nineteen and twenty in the town of Fulton, on the right or northerly bank of Rock river, one mile below the village of Indian Ford, and three-fourths of a mile above the mouth of the Catfish creek. This is the locality described by Dr. I. A. Lapham in "Antiquities of Wisconsin," under the name of "Indian Hill." The crest of the hill is ninety to one hundred feet above the bed of the river, the river bank itself being about thirty feet high and quite steep. Here are twelve long mounds or embankments, averaging about six feet in width and two and one-half in height, and of varying length, the longest being two hundred feet, the shortest ninety feet. Ten of them are nearly at rightangles to the course of the river. Of the others, one, running parallel with the river, joins the lower ends of the two parallel mounds, forming the third side of a parallelogram, the fourth, or upper side being open. The remaining one extends along the river bank joining one of the longer ones at right angles. Near the center of the line is what Dr. Lapham called a "dugway." Although at the present time it shows no traces of artificial construction, there is nothing in the conformation of the land to indicate that it is a natural water course. The area covered by this system of works is small, being about three hundred yards in length by one hundred yards in breadth, and containing something more than nine acres. There are additional mounds on the Catfish bottom, which are not included in this description, and which do not properly belong in this series of works. The soil of the hill is quite gravelly, and covered with a second growth of oak.

We commenced work on the conical mound (marked "A" in the accompanying cut Fig. 1). The top of the mound had been cut away some years ago by a party who, however, only penetrated to a depth of two feet. As we found it, it was six feet high and thirty feet in diameter. Beginning at the south edge, which almost overhangs the river bank, we opened a

trench three feet wide, making the bottom of the cutting on the original surface. While this work was progressing, we removed the loose soil from the top, until we reached the undisturbed material. The earth composing the mound was a dark colored, compact loam, apparently identical with the soil of the prairie near by. It was very dry, and packed so hard as to require the use of a pick-axe. Numerous flint-chips, with an occasional arrow-head, were found, mixed with the soil near the top, and many fragments of muscle shells with some entire ones. The first human remains were found by the party working from above, and consisted of three skeletons in a recumbent posture, with the heads to the west. The bones were very brittle and were removed in fragments. The conformation of the crania, and the position of the mound, indicated that these interments were of comparatively recent date.

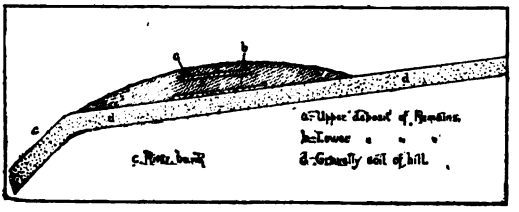

Fig. 1. Mound at Indian Ford explored by W. P. CLARKE.

The trench had been opened for a distanee of ten feet, when the first remains at the bottom were noticed. Working with care, the outlines of a skull were made out, and after much patient labor it was lifted from the bed where it had lain so long. It was quite perfect, and appears to be of the true Mound-builder type. Proceeding from the head, we uncovered the remainder of the skeleton, most of the bones being entire. It rested on the right side, with the legs flexed. Between the two lower lumbar vertebræ, was imbedded a rough stone arrow-head, which had entered from in front and penetrated to the spinal canal. The earth from the center of the mound was now carefully removed, leaving a cavity about ten feet in diameter. In this space were no less than seven skeletons. They were lying upon the original surface, and were deposited without regard to order, and it was only with great care that we were able to trace out and separate the different individuals. One skull was found at a considerable distance from any other bones. This confused condition of the remains, the entire absence of any traces of wooden or stone covering, or utensils of any sort, together with the evidence of the violent death of at least one of the individuals, seemed to us to indicate a hasty and careless interment following some sort of a conflict, in which a number were killed. A more complete examination of other tumuli in the vicinity might furnish additional data.

In connection with the skeleton first found, at the bottom of the tumulus and under the cervical vertebra was found a piece

of reddish sand-stone, mottled with light and dark spots, quite smooth and rounded on three sides. The fourth side was broken; three-quarters of an inch from the broken end is a small hole, drilled from both sides. This stone is two and three-quarter inches long, one and one-half inches wide and one-quarter inch thick, and may have been an ornament or amulet.

The small mounds at "B" and "C," each about ten feet in diameter and three feet high, were then examined, but were devoid of any remains whatever.

Our next work was at the top of the hill where were two large mounds of equal size, being forty feet in diameter, and six feet high. In the center of each of these we sunk a shaft. After removing the surface soil to the depth of six inches, we came upon remains of fire occupying an area of several feet. Ashes, charcoal and burned stone were found in abundance, with a few fragments of charred bone, and the underlying earth, to the depth of several inches, was burned quite hard. An arrow-head and a harpoon-point of a dark colored stone were found in one of these mounds. We carried our excavations to the bottom of the mounds, but found nothing more.

Returning to the foot of the hill, we made a partial examination of the tumuli "f" and "g," each of about the same size as the one first opened.

The one marked "f" was, indeed, identical in construction with that first examined, and it contained also, the two deposits of human remains, one at the top, the other at the bottom. They were, however, much decayed, and we were unable to remove them in good condition, The last mound opened was the one marked "g," and it was only opened to the depth of two feet, where the bones of an Indian were exposed. This mound, unlike all the others examined, was composed almost entirely of gravel. Darkness interrupted our work here, and circumstances have prevented us from resuming it. We thus made an examination, more or less complete, of seven of the mounds at Indian Hill. Three of them proved to be tumuli, two sacrificial, and with regard to the remaining two, we found no evidence as to their use.

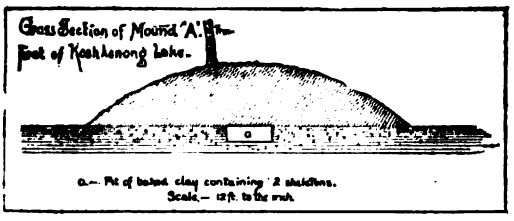

Fig. 2.

As complete an observation as possible was made of all the crania found, and a very general agreement noticed in the conformation of all those taken from the *bottom* of the tumuli. Those from the upper deposit were of the Indian type.

There are remaining a number of mounds, west of those

shown on the map, which have never been disturbed, and which may furnish something of interest to the future investigator.

Information gained from various sources, together with a superficial examination made some twenty years since, by President Whitford, led us to make our later investigations among the works situated on sections six and seven, in the town of Milton, an interesting locality, and one that seems to have been overlooked by Dr. Lapham.

Beginning at the west line of the town, one-half mile above Newville, or Goodrich's Bridge, the works extend in an easterly direction, along the Rock river, and the high shore of Lake Koshkonong, for the distance of a mile, to the point of land known as Stony Bluff, or Kinney's Point. Not only are they far more extensive than those at Indian Hill, but the mounds are, many of them, much larger. The accompanying map, No. 2, locates only forty of the conical mounds comprising that portion of the works of which a survey has been made. Eastward of this are many more, and a number of embankments, some of them of great length.

A portion of the works are in cultivated fields, and the height of the mounds has been materially reduced by repeated plowings. Here the flint-chippings, fragments of pottery, some of it considerably ornamented, arrow, spear and harpoon points, scrapers and axes are found in abundance. A number of pieces of native copper have also been picked up here.

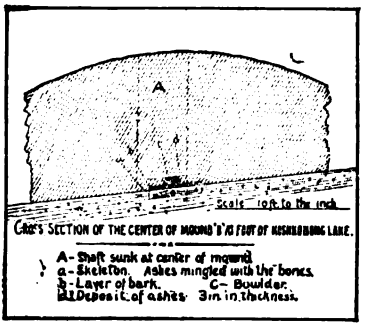
A
Scale 10ft. to the inch
CASE'S SECTION OF THE CENTER OF MOUND 'A' 40 FEET OF KOSHKONONG LAKE.
A- Shaft sunk at center of mound.
a- Skeleton. Ashes mingled with the bones.
b- Layer of bark. C- Boulder.
d Deposit of ashes 3in. in thickness.

Fig. 3.

Our first work here was the opening of a mound 8 feet high and 40 feet in diameter (See Fig. 2) by means of the trench. The material of this mound was the ordinary surface soil, mixed with which were numerous rocks, some of large size. A black oak 12 inches in diameter grew upon the top. At the center of the mound our excavation revealed a cavity in the natural soil, 5 feet long, 3½ feet wide, and 1½ feet deep. The earth composing the sides and bottom of this pit was baked quite hard, as was that immediately above it, the heat having been sufficient to change the limestone, mixed with the soil, into quicklime. In the east end of the cavity was the skeleton of an adult, in the west end that of a small child. The bones were so much decayed, and so broken that we could save nothing of value. The mound "b" was next opened. It is within a few yards of the river, and had an altitude of thirteen feet, and a diameter of

seventy-five feet. We sunk a shaft five feet wide by eight feet long in the center. The material of which it is composed is identical with the soil of the river bank at this point, being a black loam with a large proportion of sand. It had mixed with it an immense quantity of the muscle-shells, two varieties of "Unio," which are abundant in the river.

At the depth of twelve feet a deposit of ashes was encountered three to four inches in thickness, and immediately below the ashes was a flattish stone weighing in the neighborhood of 150 pounds.

Removing the stone we found many fragments of decayed wood or bark, and under these a human skeleton, the bones intermingled with ashes. Neither the bones nor the surrounding earth showed any traces of fire, so that the ashes must have been brought from some other locality and deposited with, and above the remains. Two skeletons were uncovered here, but one of which was at all perfect. Part of the bones were, apparently, nearly dissolved by the action of the alkali. One skull from this mound, although much broken up, I have restored sufficiently to make some measurement sand photographs.

The measurements of this skull, and the one from Indian Hill, are appended hereto, and are as follows:

Skull from Indian Hill:

	Inches.
Longitudinal diameter	7.07
Parietal diameter	5.31
Frontal diameter	3.40
Vertical diameter	5.95
Occipita-frontal arch, (from nasal depression to foramen magnum)	14.
Horizontal circumference	19.80
Greatest transverse diameter (being through the temporal region)	5.48
Cubic capacity	67.5
Facial Angle	78°

Skull from foot of Lake Koshkonong:

	Inches.
Longitudinal diameter	7.25
Parietal diameter	5.75
Frontal diameter	4.37
Vertical diameter	6.20
Occipito-frontal arch	15.30
Horizontal circumference	21.22
Greatest transverse diameter (temporal)	5.90
Cubic capacity	85.
Facial angle	

The prominent supercilliary ridges and the great outward sweep of the zygomatic arch, are noticeable in both these crania. The smaller one has also the *Ossa Wormensia;* and the jaws are proganthous, the front teeth of the lower jaw shutting directly against those of the upper. It will also be noticed that the greatest transverse diameter in these skulls is through the

temporal region, just above the canal for the ear, while in the modern Indian so far as my observation goes, it is through the upper portion of the parietals. We noticed in nearly all of the skeletons taken from the bottom of the mounds, the flattening of the tibia, mentioned by Dr. Foster and others.

From this short sketch of our work it will be seen there is still an opportunity for extended research at both the points visited by us, especially the latter one. Along the shores of Lake Koshkonong, there are doubtless 200 mounds as yet undisturbed, and I trust that the coming summer will bring some one with time and ability to make a thorough investigation in that locality.

MILTON, WIS. W. P. CLARKE.

EMBLEMATIC MOUNDS AS WORKS OF ART.

THE ATTITUDES OF THE ANIMALS REPRESENTED.

In studying the emblematic mounds we have thus far considered them from a scientific stand point, having given especial attention to their shapes, and by their shapes having identified the animals represented. We now turn to another aspect of the subject and propose to consider the mounds as works of art. In doing so we shall give attention to attitudes of the animals represented and in these find the evidence of artistic skill. It is a very interesting fact that the attitudes of the animals are presented to us by the mounds in a very life-like manner, so that the effigies are exceedingly attractive as works of art. The study of the mounds is in fact like a study of the animated nature. It not only brings before us the grand divisions of the animal kingdom and suggests methods of classification according to their haunts and habits, which are very suggestive viewed in a scientific light, but it brings before us the peculiar attitudes and positions of the animals which prove attractive to the eye, viewed in an artistic sense. We do not say that they were intended as works of art, or that the builders of the mounds were trained artists whose effort was to make them artistic, any more than we maintain that they were educated scientists acquainted with classification of science; but this is the fact concerning them, the builders of the effigies were both naturalists and artists who were unconscious of their knowledge and skill, and their works are more interesting because of their very naturalness. It is one effort of art to reach the point of naturalness, so that the expressiveness and simplicity of nature may come forth free from the factitious and artificial appearance. Here, however, we have

a native art which presents this peculiarity to perfection, the skill of the builders having been exercised in the most natural way and the objects wrought out by them coming before us in the most natural and life-like shapes. It is worthy of notice that art existed among the primitive races, and that in some directions it reached a high degree of perfection, even at a very early period. For skill in portraying the animal shapes, the primitive artists were even superior to many of the modern and trained sculptors and painters.

We do not need to dwell upon this point, but would merely say that the earliest specimens of art in all countries have abounded with animal figures, and that the period which may be considered the child-like age of the race has furnished many beautiful specimens of art, showing that there is a natural faculty in the human race, which enables men, even when untrained, to imitate animal forms. The relics which have come to us from rude and uncivilized people often present specimens of carving and drawing which are absolutely astonishing. The early coins of Greece and Troy contain animal figures; the sculptures of Assyria, Babylon, and Egypt, also contain the statues of animals, which, viewed in an artistic light, are admired by all classes. The specimens of pottery, the carved pipes of the mound builders contain animal figures. The totem posts, carved boats, and the ornamented implements found among the Thlinx keets of the northwest coast illustrate the same point. The art of carving animal figures reached a high point among these races. The same thing is true with the inhabitants of Mexico and Central America. The sculptured facades of their palaces abound with animal shapes and the carved idols and images present many animal figures. One explanation of this is that the native races were familiar with animal life, and as they had much imitative skill they were able to portray the animals in a natural and life-like manner. Another explanation is that the so-called animal worship which prevailed among the primitive races, gave them a great admiration for animals, and led them to notice and to be impressed by the shapes and attitudes of the animals. They were regarded by them as divinities, and their moods were considered to be expressive of the mind of the Divinity and conveyed to their superstitious minds great awe and fear. This fact throws light upon the specimens of art and animal figures which have come down to us from the early and primitive times. A comparison between the carved bone implements taken from the caves of Europe with the bone implements found among the Esquimaux proves that the primitive races were skillful in drawing animal shapes. The same conclusion, we think, will be reached by our readers when they come to see how skillful the emblematic mound-builders were in the same work. The writer has come in contact with native artists at the west, and found that their

skill in depicting animals was perfectly natural, and noticed that it seemed easy for them to not only draw the shape of an animal but to give it an expressive attitude. Travelers and early settlers who were in this state while the Indian races were still inhabiting it, have also informed the writer that they have seen the bark huts or wigwams lined on the inside with animal figures, the figures being very life-like and showing that the natives had great skill in drawing. We do not consider then, that the animal effigies prove any high degree of cultivation, even if they are artistic in their shapes, but they are interesting, as they bring before us the native artists in all their unconscious skill and make us to see how familiar these artists were with animal life. We do not think that there was any set rule by which the effigies were erected or that any established order or style of representing the animals existed, for everything seems to be perfectly natural, and the perfection of the artist is that they were so artless.

The attitudes of the animals illustrate a point worthy of notice. The animals come before us as illustrations of animated nature and the scene becomes as full of life almost as if the animals were restored to the native haunts. Nothing can present to us a greater variety nor a more interesting study than the effigies do. The several points to which we shall refer will illustrate the artistic skill of the emblematic mound builders. Our readers will, however, consider that this skill is not to be brought before them by pen or paper. The descriptions which we shall give are mere hints. The skill exhibited by the artists can be appreciated only by examining the effigies themselves. There are effigies in existence which retain the original shape and symmetry, and such convey an idea of artistic beauty which is not given by the ordinary specimens. We are aware that many, who look upon the effigies obliterated by time as they are, and in the midst of the works of civilization, fail to see the resemblances to the attitudes of animals which we have described, but these descriptions are not taken from obliterated mounds, and are not based upon the imperfect data with which many come in contact. Familiarity with the mounds from childhood has given the writer an idea of their symmetry, which few get by passing observation. When we speak of the attitudes, we speak not so much from what we have seen in any particular locality, but from what we have seen in many localities, so that the points which we make are perceptible to us while they are imperceptible to others. We do not consider the descriptions overdrawn.

I. The first point to which we refer is the variety contained in the attitudes of the animals. We furnish a series of cuts to show how the different animals are made to assume a great variety of attitudes. The series might be

indefinitely increased, for if there is one thing more perceptible than another in the effigies, it is this, that the attitudes are so varied. We confine ourselves mainly to the land animals, and give only a few specimens of these. There is, however, scarcely a group of effigies in the state in which new attitudes are not perceptible, and we therefore only hint at the point, and refer our readers to the mounds themselves as illustrations. The descriptions and figure are based upon an accurate and careful survey.

The writer has found by experience that the plotting of the mounds by actual measurement, always brings out the attitudes of the animals, and has frequently corrected his own drawings by a second measurement. We take the bear as a specimen, but would say, there are many other effigies which illustrate the point even better than the bear. We find that there are five or six attitudes in which this creature is represented, each effigy being expressive of some attitude which is natural with the bear.

Fig. 65.

Fig. 66.

The shape of the animal, is natural and life-like, but the attitudes exhibit the various dispositions or moods of the bear, showing that the artists were familiar with all the habits of the animal and were very skillful in representing them.

Two of these figures are taken from the works of Squier and Davis. One was situated in Richland county, and was first described by Mr. R. Taylor. It was fifty-six feet long and twenty

Fig. 67.

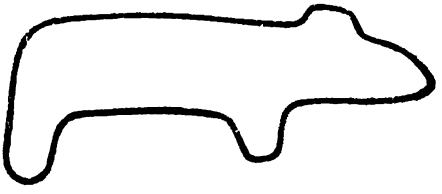

Fig. 68.

inches high. The second was discovered at Blue River, on English Prairie. It was eighty-four feet long and six feet high. The third was discovered by Dr. I. A. Lapham. It formerly existed at Honey Creek, and represents the bear as in the attitude of climbing. The fourth was found by Dr. Lapham, at Otter Creek. The effigy does not resemble the bear so much as the other fig-

ures, and yet was intended to represent one attitude of the animal. The fifth was also discovered by Dr. Lapham, and was found by him at Sauk Prairie.* A similar effigy has been discovered by the author at Lake Monona. The sixth was described by Dr. De Harte. It was found by him on the Asylum grounds, north of Lake Mendota. These are all isolated effigies, and cannot be said to have any other use than as representations of the animals, though it is possible that they were employed as totems. The bear was a common totem among the native races, and its form was often used in native heraldry to indicate the clan or tribal connection of individuals or families. The effigy of the

Fig. 69.

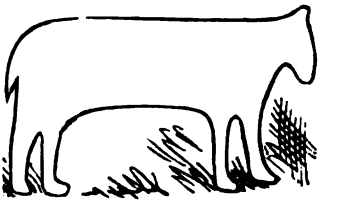

Fig. 70.

bear placed on the ground near the residence of some chief or prominent person, may have represented the totem or clan sign of the chief, very much as the totem posts found in the northwest coast, and among the Aleutian Islands do at the present time. This may also explain the attitudes of the animal as they are seen in the effigies. We know that pictures of animals were frequently placed on the grave posts, and that the attitudes of the animal became expressive of the incidents or events in the history of the individual. There are many illustrations of this. Schoolcraft has given cuts representing the totems of the Sioux and Chippewas. He says: "The grave board contains the symbolic, or representative figure which records, if it be a warrior, his totem; that is to say, the symbol of his family or sirname, or such arithmetical or other devices as seem to denote how many times the deceased has been in war parties, and how many scalps he has taken from the enemy, two points on which the reputation is essentially based." The attitudes of the animal, then, were probably significant, and the variety of the attitudes is worth noteing on this account. We need only to remember thatt he natives had the same love of approbation that civilized people have, and if they could not record their deeds by written language, they could, nevertheless, make them known by pictures. We may conclude the animal shape as expressive of the clan or tribal connection, and that the attitudes were expressive of personal history. The effigy was a totem

* See Smithsonian Contributions, Vol. I, Plate XLIII.

showing the tribal connection, and a symbol showing what divinity had appeared to the chief in his dreams. It would also represent the legend or traditionary record of the individual, and would serve as a sort of picture writing, which to the native eye would be expressive of the life, character and history of the individual. There are effigies of this kind which were placed in the midst of village inclosures. They apparently serve no other purpose than to mark the spot where some person had once dwelt, and where possibly he was buried.

As an illustration of this point, we would refer to a locality near Madison. Here, on the ground formerly owned by Gov. Washburn, is what we have taken as the site of an ancient village, the walls surrounding the place giving indications to this effect. There are at this place various effigies, which are scattered over the surface of the ground, without regard to their use, either as defense or lookout, giving the idea that they may have been totems in front of some habitation. Among the effigies so situated is a bear, a bird, two rabbits, two lynxs and a panther. See Figs. 71 and 72. Some of these effigies

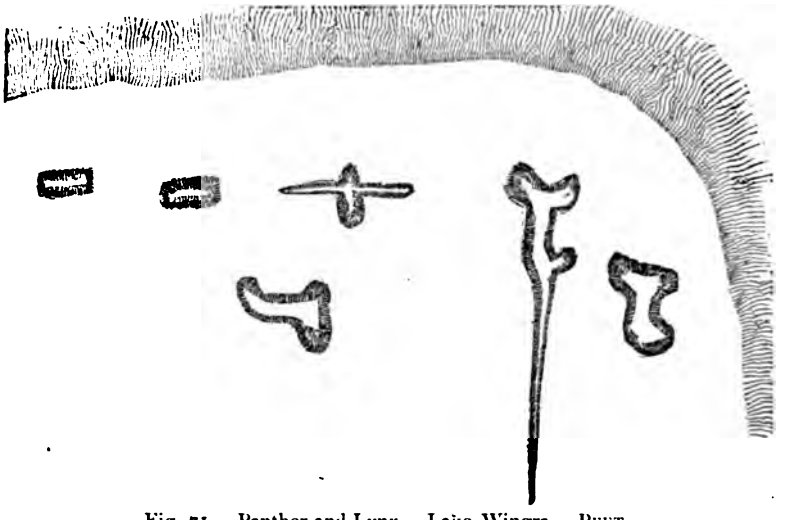

Fig. 71 — Panther and Lynx. Lake Wingra. PEET.

are situated on the edge of a swail, indicating that they were used as partial guards, but others, those of the rabbit and hare, are situated in the midst of the so-called village. The attitudes of the effigies are all of them indicative of a peaceful condition. The panther crouches as if at rest, the bird soars in the air, and the lynx stands quietly, every effigy having the same expressive attitude, the indication being that village life was here enjoyed, and the totems of the village were placed at the very doors of the houses, as if they were enjoying the security and the villagers were themselves partaking of their peaceful mood.

The ancestor worship which prevailed, would account for the location of the effigy. It was a superstition among the natives that the spirit of the dead remained near the grave, and great care was taken to appease the spirits and to keep them at peace with the living. There was also an endearment which led to the placing of the distinguished dead close by the living. A sense of protection was secured by the presence of the effigy of some prominent person. The emblematic mounds were frequently burial mounds, and, as such, were at times scattered indiscriminately over the surface of the earth. This, then, is the first use of the effigy to which we would refer. Confirmatory of this we might speak of the great number of effigies which are thus found scattered about without any apparent order or intent.

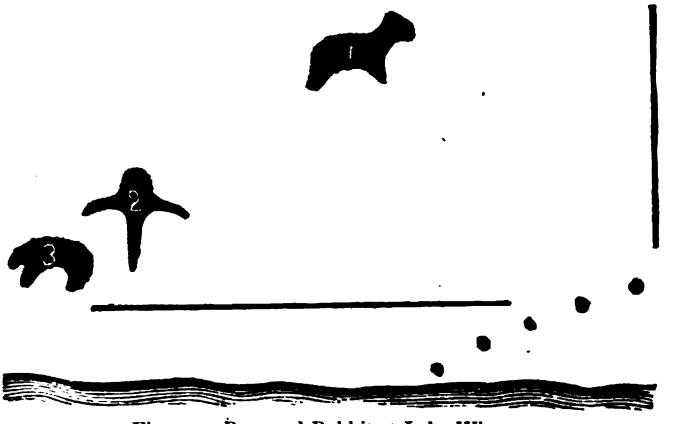

Fig. 72. Bear and Rabbit at Lake Wingra.

We take an illustration of this from the survey of Mr. H. N. Canfield, who was an early settler in the state, and a great student of the emblematic mounds. He has depicted a group of effigies which formerly existed on the banks of the Baraboo River, close by the village of Baraboo. See Fig. 73. It is a remarkable group, but has now nearly disappeared. It will be noticed that in these localities a great variety of animals is portrayed and that the animals are given in a very different attitude. The four-footed creatures abound here more than birds. Among these the most prominent are the weasel

NOTE. This cut illustrates the difficulty in getting the attitudes of the effigies. The rabbit and the hare are both represented in effigies at this place, but the measurement and plotting failed in the first instance to give the attitudes of the animals. A future paper will contain figures of these effigies from measurements, and it will be seen from them how skillful the native artists were in depicting the attitudes of these animals. The rabbit is so difficult to portray, that Dr. Lapham always failed to even recognize the animal. We claim to have recognized the animal by the shape and the attitude but we have failed in depicting these in the drawing.

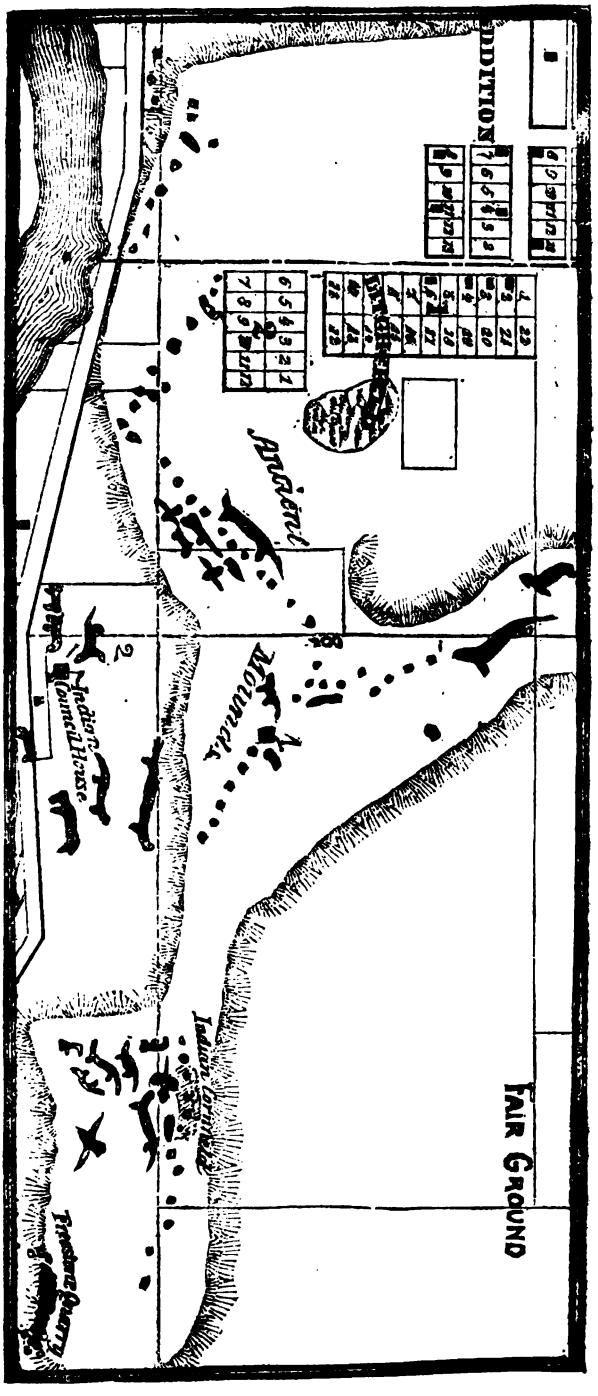

Fig. 73. Animals in different attitudes at Baraboo. CANFIELD.

and the fox, though the buffalo and panther may be recognized. It is noticeable that the weasel is found in more diverse attitudes than most other animals.* Perhaps the shape of the animal itself favors this. The author has found the weasel in several localities. One on the banks of Lake Wingra, on the Washburn place. Another on the north bank of Lake Mendota, east of the Insane Asylum. Mr. Canfield has located an Indian council house in the midst of one group of the effigies, and judging from the locality, we should say that it may have been not only the site of a council house, with the modern Indians as he has described it, but also the place where the Mound Builders themselves had a council house. The arrangement of the effigies on the banks of the stream beneath the bluff and near the burial places is worthy of attention. It is possible that some significance was given to the effigies and that they served as a kind of picture writing, a tribal record being given by them as well as the tribal signs. It would seem from the number of the tumuli, that these effigies were personal totems, and it may be that the attitudes of the animals were intended to convey an idea as to the persons who were buried. The shape of the animal would give the tribal sign but the attitudes would give the personal names. Burial mounds have been found having the shape of animals. One such was excavated by Prof. Putnam. This was situated at La Crosse, and is described by him as having the shape of a turtle. Another burial mound having the same shape, was excavated several years ago by Prof. Eaton of Beloit College, and Mr. Heg, now editor of the Geneva Herald. This was situated near Beloit amid a group of effigies, all of which were probably burial mounds. This group is prominently situated on the summit of a hill overlooking the Rock river, and is not distant from the group which may be seen on the college grounds. The totemic character of the effigies is one which seems to correspond with the habits and customs of the native tribes, and is a reasonable explanation of the variety of animal shapes and attitudes. One of the most important points in connection with the native religion was the doctrine of the spirits of the

*NOTE — The author visited the locality during the summer of 1883, in company with Mr. F. W. Putnam and J. Kimball, and discovered a few of the effigies in the group, but found that a large proportion had disappeared. The group represented in figure 73 is on Mr. Remington's farm, and adjoins the town plot east of Baraboo. A street passes through the group and nearly all of the mounds have been obliterated. Those who visit the group will notice how the line of the street has cut across and taken out the most prominent figures, leaving only the weasel and the bird. The drawing by Wm. H. Canfield settles the point which the writer maintained in reference to the animal intended by one of the figures, namely the weasel. It illustrates the fact that familiarity with the effigies trains the eye to a quick recognition of the animal intended. We maintain that an ordinary surveyor is unfit to enter the field and to give a proper representation of the animals. Mr. Canfield is a surveyor, but he is familiar with the mounds, and his representations are entirely reliable.

dead. The natives supposed that the animals were ancestors and that they had great control over their destiny. The totems were then expressive, both of tribal connections and of the tribal ancestry. Along with this notion of an animal ancestry, there was connected another, namely, that of a divinity. The animal divinities were supernatural creatures, who ruled in the realms of the spirit. They were not only divinities, but they were also the spirits of the dead. The doctrine prevailed that the spirits of the dead entered into animals or took animal shapes. The rudimentary form of all religion, Mr. Herbert Spencer says, is the propitiation of dead ancestors. The custom of worshiping the dead was common. One of the most important religious ceremonies of the Ojibwas was the feast of the dead, in which they kindled a fire at the graves, and burned meat as sacrifice to the dead. The Virginians also worship the manes of those buried in their tumuli.

There is no doubt then that the presence of the animal effigies in connection with the burial place was significant of the religious faith and that the custom of erecting these effigies sprang from their animal worship. Perhaps this will explain the care with which the effigies were constructed. It is remarkable with what skill the effigies were shaped. This skill is mainly exercised in depicting the attitudes. A soul or spirit was thrown into these so that the effigies became very expressive. The religious faith expended itself upon these works, but the faith apprehended the spirit and sought to delineate it in the effigy. Animal spirits were worshipped and feared, and whatever could express that spirit had great power over the people. There is no doubt then that the attitudes were made to illustrate the spirit of the animal. This gave a naturalness to the attitudes. The people were very impressible. The fear which they had made them so, even if they were not naturally impressible. The skill of the artist is in his impressibility and in his power in reaching or effecting the impressibility of others. The natives were on this account true artists. Just as the religious emotions in the times of Raphael and Guido gave such a wonderful charm to the face of women, the mariolatry of the period having almost apotheosized womanly beauty, so in this period of animal worship and demonolatry the religious sense gave a wonderful expressiveness to animal shapes.

The wild sons of the forest were more impressible than we. True children of nature, they drank in the spirit of the scenes. Their untutored mind had no knowledge of Divinity, except as they saw it in the forms of nature. In a sense the earth itself was a Divinity, just as it was to the ancients, the great mother Demeter ruling over all, while the sun, as the father, was the over-shadowing power. To them there was a soul in everything; every cloud that cast its shadow across the sky, every change

that came upon the blue-waved lake, every season that left its foot-step in field or forest, was but the varied movement of their great Divinity. The smiling meadow, the darkening forest, the rustling leaf, everything in nature was expressive to them. We may, however, find the same impression, the scene remains and the effigies bring back the animals to people the scene.

As a picture of animal life, these groups are worthy of study. It is like entering into the haunts of the animals and observing them as they move and act in their natural conditions. The effigies are not conventional, and do not present the animals in stereotyped manner, but a wonderful freedom is displayed. The artists have great skill in throwing spirit and life into the attitudes of the animals. They are none of them constrained or unnatural, but they move before us in all their native force, each animal acting out its own disposition, and each attitude having some apparent intent before it. It is very interesting to go into the midst of these effigies to see how varied every attitude is, and how true to nature every shape becomes. The scene is alive with animals, every animal being represented in the most expressive attitudes. These attitudes both represent the natural pose of the animals, either as rampant or crouching, also as prowling after or pouncing upon their prey, as either antagonistic in conflict, or as victim and victorious. One sees the birds in flight, chased by one deadlier, or soaring peacefully with outspread wings, or occasionally with weary wings lapped and lagging; or again as darting through the air. The crane has the crook in his neck which the hunter knows to be peculiar to the crane; the night hawk swoops in the way peculiar to that bird; the pigeon flies with sharp, quick wing; the eagle soars with stately measure; the wild geese fly in flocks or follow one another in line; the hawk chases his prey with savage bill; the king bird hangs close to the weary wing of the long winged heron or crane. So too of the other animals; the turtle crawls up from the channel of creek or river, and rests on the brow of the hill, or stretches neck and tail on its very summit. The lizard spreads out his crooked legs and narrow body and tapering tail; the tadpole almost wiggles before one's eyes; the bullpout flops his tail, and his crooked body lies panting on the hill; the snake twists his narrow body along the ridge; the otter lies with snout protruded ready for his slide; the fox creeps stealthily; the mink drags his long and slender body along; the crawfish spreads his claws, and the skeptical critic stands and says where did you see all this? It may be seen, nevertheless. The attitudes are indeed the most expressive and important part of the animal and forms. Their attitudes were the expressions of the spirit of the animals as they were known, but they were also expressions of something more. If the mounds had any significance this imitation itself conveyed the meaning.

It is not possible that all those thousands of elaborate and massive forms were designed only for the fancy and as a plaything thrown upon the top of the earth. There is too much variety and too much expression for this. The attitudes then, had a significance as well as the forms. There was the work of imagination in the attitudes, but it was probably an imagination controlled by their superstition. We come then to the religious significance of the mounds and say, did we know more of this we would know much more of the significance of the forms.

There is one peculiarity about the animal effigies, and that is that the artist and the hunter were united in their construction, and they present to us animal life in all its natural state, and with the very wildness which once existed. This has, however, departed, and therefore the picture given by the mounds is the more valuable. Sportsmen spend days and weeks upon the banks of these lakes, but they rarely become familiar with the habits of the animals. A few may come to understand in a very limited extent the habits and ways of the birds, but the wild animals have so departed from the region that supreme ignorance prevails concerning them. A menagery may bring a few animals from distant countries, and imprisoned and constrained as they are, they are looked upon by the crowds. In the zoölogical gardens, birds and wild beasts are less constrained, but even here we see very little of the true nature of the animals. The collection of the animals according to locality, and as the representations of the fauna of our country, is a work which is becoming of great interest to intelligent persons. One of the most attractive features about the Centennial exhibition was that in the Colorado building. Here was a collection of the wild animals which abound in that state, the animals all being represented as they were seen by the huntress in their natural haunts. The collection was prepared by a woman, and proved how near to nature's heart a woman may become when she enters into the real spirit of nature.

The naturalist takes the skeletons of animals and analyzes them and dissects but he rarely hunts. Naturalists as a class, are not acquainted with the habits and haunts of the animals, and are poor in their representation of animal life. They understand the anatomical peculiarities, and can describe the physical structure of the animals, but artists are much better acquainted with the attitudes and moods. The native hunters, however, were artists as well as naturalists. They differed from modern sportsmen in that they became familiar with the very haunts of the creatures which they portrayed. They followed the animals and entered into their inmost life. Their zeal was expended in tracking the animals to their inmost hiding place. The more intractable the animals were, the more their ardor was aroused. The inmost principle of wildness was understood by them, and

corresponded to that of the animal. The mound builder was a hunter. He knew all about the animals. There was a sympathy between him and the creatures which he depicted. There is no doubt that there was an admiration for the very form and attitude which led to the shaping of the effigies. The effigies are of colossal size and have great artistic excellence and originality. They are unique and true to nature. A sculpture gallery is furnished by these earth forms which is unequalled by any works of art. We only need to divest ourselves of the impressions which the fields and houses make, to feel that it is a gallery full of life and one which conforms to the scenery. "The artist understood how to translate pose into meaning and action into utterance, and selected those poses and actions which convey the broadest and most comprehensive ideas of the subject." "He not only knows the posture or movement the anatomical structure of the animal renders possible, but he knows precisely in what degree such picture or movement is modified by the animal's physical needs and instincts." There is a subtle and deep meaning to the effigies. At first there is the simple animal, too simple to be artistically interesting, but upon further study a deeper meaning appears in the attitudes. "The simple animal avouches his ability to transcend any conception of him. The instinct and capacity which inform all of his proceedings, the sureness and efficiency of his every manifestation are in the effigies, but they are concealed from a hasty glance by the very perfection of their state. Once seen and comprehended, however, they work upon the mind of the observer with an ever increasing power. They lead him into a new, strange and fascinating world, and generously recompense him." Very few understand what perfection there was originally in these colossal shapes, carved out of the earth and covered with the green sward. They seem to move under one's feet. It always seems a great pity to have them disturbed. The wear of the elements has a tendency to destroy the sharpness of their outlines, but it did not take away from the wildness or naturalness of the attitudes. The plow and the spade are the great disturbers of nature. The relic hunter is the iconoclast. Utility and curiosity have invaded nature's art gallery and have made sad havoc. The images are many of them destroyed. Artists occasionally enter the wild fastnesses of the west, and become familiar with the wild animals, that they may become familiar with their works. Painting and sculpture have both been devoted to the representation of animal figures. Such artists as have given attention to this line have been admired. The paintings of Catlin are known and admired because of their excellence in portraying animal life. The government has purchased these at great expense and placed them in the museum, where they are safe. The recent review of the statuary by Kenney, in a popu-

lar journal,* has called attention to the beauty which the animal figures and attitudes that the animals have when shaped in bronze, but here we have in the earth-molds animal figures which are life-like and true to nature as any artist can make them, and yet we are careless in reference to their preservation and their destruction is inevitable. As works of art and pictures of the native fauna we think these figures are invaluable, and make our plea that they be preserved.

II. We call attention to a second point in connection with the attitude ot the animals. The distinguishing peculiarity is that they have a hidden significance, and were expressive of the superstitious views with which the people regarded the animals.

The significance of the attitudes may not be understood, but when viewed in connection with the moods of the animals and especially with relation to the office which they served they become expressive of a hidden meaning. The moods of the animals are depicted in the attitudes presented by the effigies, but these moods are expressive of something more. It is interesting to go from group to group, and to see how expressive every effigy is. If the language or intent may not be read or understood, the animal attitudes at least prove attractive to the eye. The moods of the animals are exhibited — not by a single group, for it is seldom that the same attitude is repeated more than once, but passing from group to group we see the different moods. In this place the effigy presents the animal in a standing posture, quiet, symmetrical, and with a poise which is expressive of the animal's strength. In another the creature is in conflict, either confronting an animal of the same kind ready for battle or in the attitude of conflict, such as would be most natural to the species or perhaps as triumphing over the enemy and driving it from the field. In another place the attitude is expressive of motion, every part of the animal giving the idea of fleetness, as if the creature was in the midst of a chase. Such effigies are generally found in connection with groups which are supposed to have been used for game drives. In other places the animal is seen in the attitude of prowling, the figure having a peculiar, stealthy appearance with the limbs bent and every part strained for close attention. In other places, still, the same animal may be seen resting, the body and head and limbs all being in a relaxed and restful state. In other places the effigy will be seen standing guard over the caches which are placed near its head or presenting its massive sides as a defense to an inclosure, the wall to which is composed in part of its figure. Everywhere the attitude of the animal is most life-like, but the mood and spirit are depicted in a very artistic manner.

We present a series of cuts to illustrate the point. We have taken the panther as the specimen best calculated to represent

* The Century for May, 1884.

it. These effigies have been noticed and their shapes and attitudes studied by the author, and the figures are here presented from actual surveys. They are not the works of imagination, for they are drawn according to actual measurement. The figures are taken from widely separated localities, but they are given as they were found.

It should be said that effigies are generally found confined to certain localities, some presenting panthers numerously but other localities presenting some other animal with the same prominence. A ruling divinity always presides over a locality. In one place it may be the eagle, in another the turtle, in another the panther, in another the wild goose, and in still another the raccoon or wolf. The attitudes of the animals will be seen, not in any single group, but by studying the various groups, as all the groups are characterized by the presence of the ruling divinity, one group furnishing one attitude and another another, the whole series giving a history of the Divinity or showing how varied his moods were. The figure presented on Fig. 74, is an effigy which was discovered by Dr. Lapham, at Waukesha, on Bird Hill. It presents the panther in an attitude which is very common.

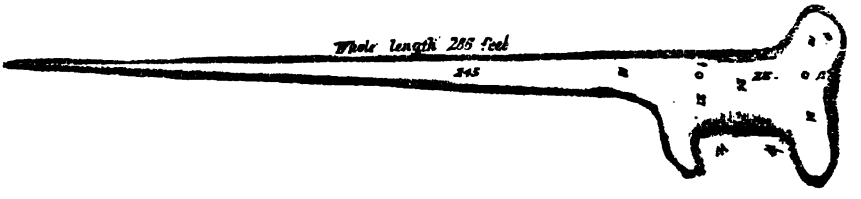

Fig. 74. Panther at Waukesha — LAPHAM.

The author has seen effigies of the same kind in many localities; one at Great Bend, serving as a guard or part of a village wall of defense; others at Madison forming portions of a long line of effigies, which surmounts an elevated ridge near the cemetery; another, having the same attitude, is a member of a group which abound with panthers, situated near Beloit. This attitude is the one which may be regarded as expressive of strength, and it is often accordingly seen in connection with the works of defense, as it is appropriate for such works.

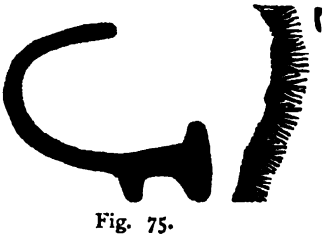

Fig. 75.

A second attitude is given by figure 75. This is also a common attitude, There are several localities where the same figure has been seen by the author, and Dr. Lapham has mentioned still other places. One such panther formerly existed at Kilbourne City, on the Wisconsin river. The body of the effigy has been destroyed in the

grading of the street, and the tail is all that is left at the present time. Another figure similar to it, formerly existed at Burlington, on the Fox river.* This has been destroyed. The attitude is expressive and one that is natural to the panther, the lion-like disposition being very manifest in it. The figure is one of a group seen at Ripley Lake. Here, as in all other cases, when seen in this attitude the animal is placed on an eminence and evidently was intended as an outlook; the animal, from his position on the summit of the bluff overlooking the lake, suggesting this idea. The third attitude is one where two panthers are seen in apparent conflict. These effigies were discovered on the banks of Ripley Lake. Fig. 76. The significance of the attitudes will be understood from the figures. Two others resembling them may be seen on the banks of Green Lake. There are panthers in conflict among a group near Beloit, but the animals in this group are pictured as parallel with one another, thrusting their claws into each other's bodies. The heads and tails are thrown out, but the hind legs drawn near together. A fourth attitude is one represented in Fig. 77. Here the male panther is in the attitude of triumph. The female contrasts with the male, both, however, having shapes which are very natural and expressive. This is the figure which has been visited by so many of the attendants upon the Monona Lake Assembly, as it is on ground belonging to Mr. Griffith, not far from the Lake Side.

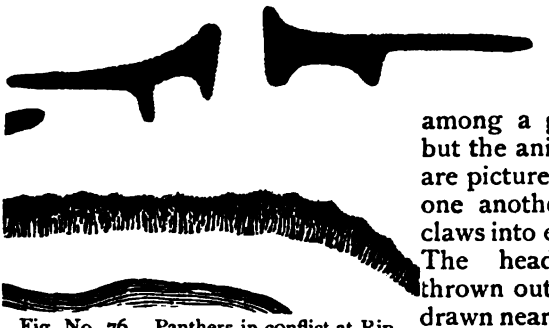

Fig. No. 76. Panthers in conflict at Ripley Lake.

The attitudes of the animals are unique, and express much as to the moods of the creatures pictured.

A fifth attitude of the panther (see Fig. 78) is the one which has been referred to above. It represents the animal as in the act of running, and the connection of the effigy with a game drive would indicate that the intent was to represent the panther as in a chase after game. This effigy was discovered by the author on the west bank of Lake Koshkonong. It forms one of a very interesting series of effigies, among which is the tortoise, another panther, and several other animals. A similar effigy to this has been seen by the author near New Lisbon, on the banks of a small stream, and not far from the site of an Indian dance ground.

* See Lapham's Antiquities, Plate ooo.

It is attended with a peculiar group of mounds, which to the author seemed like a trap for ensnaring game. The attitude of the animal is here varied, in that it was expressive of a certainty of its victim, whereas in the other case the attitude was expressive of great haste, and a determination to overtake the object of pursuit. The animal in both cases is represented as running

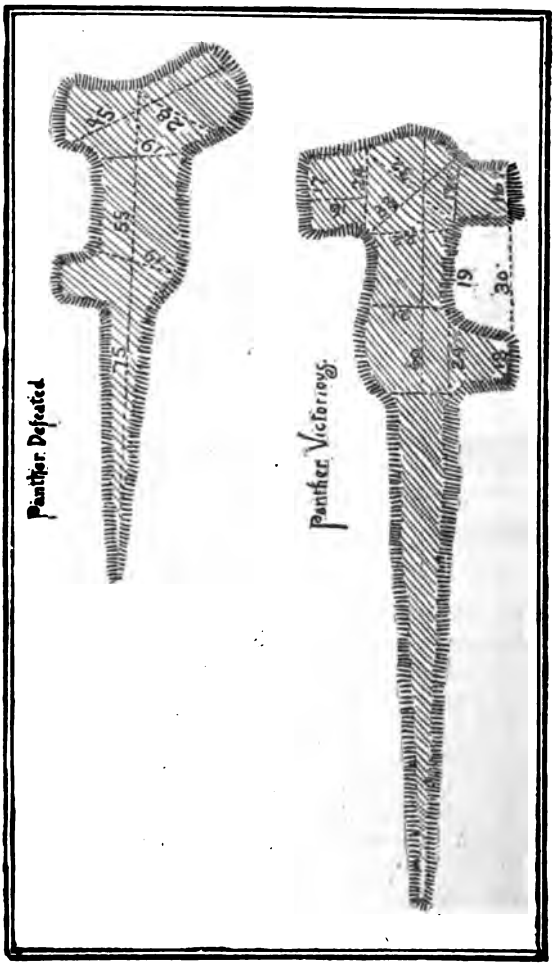

Fig. 77. Panthers at Lakeside. FEET.

rapidly, every part of the effigy giving force to this idea. A sixth attitude of the panther is that given by Fig. 80. We will not undertake to interpret the purpose or significance of the effigy. It is an attitude which is natural to the animal, and one which is not uncommon in the effigies. The figure was taken from a plate drawn by Dr. Lapham. Another figure similar to

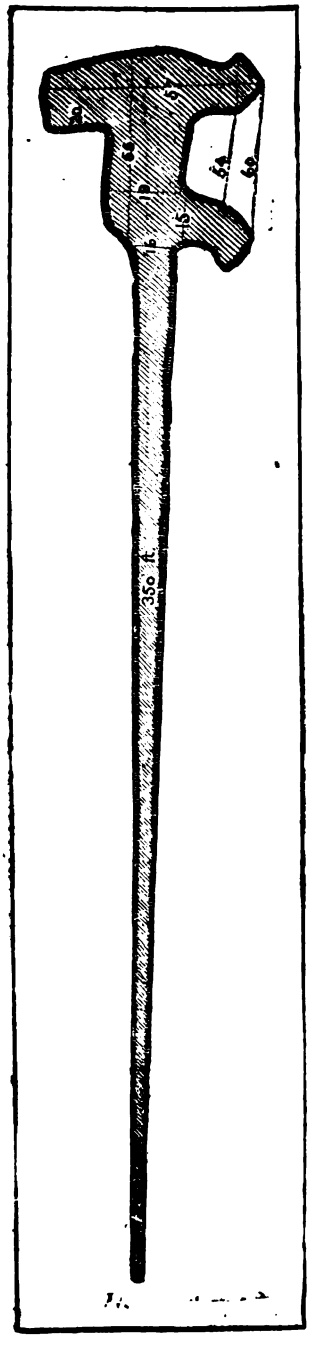

Fig. 78.

this has been furnished by the same author, but the animal is therein watching a mound where was a cache of grain, indicating that the purpose was to represent the animal as guarding the stores of grain which had been hidden away by the native builders. Another attitude of the panther may be seen in Fig. 70. Here the panther is at rest. This effigy contrasts with the other figures, and yet it compares with the animals surrounding it, as the effigies in this group are, as we have stated, all in a peaceful mood, their very attitude expressing rest. We have been particular in describing the attitudes of the panther, because this animal is always very prominent among the mounds. There are localities, to be sure, where the effigies are more numerous than in others, but the effigy seems to have been a prevailing one throughout the whole state. The panther is very prominent in the vicinity of the four lakes, and it will be noticed that most of these specimens have been taken from this region. The seventh attitude is shown which is here presented in Fig. 79, and which is seen to be in an entirely different attitude. This figure was discovered by the author near the site of an ancient village, at Great Bend. The purpose of the effigy was, evidently, to protect the grain which had been deposited in the pit or caches near its head, the superstition of the builders having given to the animal figure a charm which made it powerful as a protector, as well as an object of fear and adoration as a divinity.

There is one point to which we would call attention in this connection — the office which was served by the attitude. Each effigy seems to have had an office, which the attitude of the animal expressed, the shape or attitude in which the animal was represented corresponding to the office. That there should be a double purpose in the attitude is not a mere matter of fancy with the author, for there are too many indications of it in the effigies. It appears that the builders of the effigies exercised their skill in depicting the various moods which they had come to recognize as peculiar to this animal, but they associated these moods with the character of their divinities, so as to make them expressive. Every totem which they erected had its natural attitude and its supernatural significance, the attitude representing the mood of the animal, but the office served by the effigies representing the supernatural power of the divinity. One illustration of this is here given. The buffalo is an animal which is commonly represented as feeding. The effigies of the buffalo are frequently found in meadows or in bottom lands, the attitude and the locality both being expressive of the grazing habits of the creature. There is one place, however, where the buffalo is presented in an attitude which is far from peaceful, every part of the animal being made expressive of a belligerent state. In the midst of the effigy, wherever the limbs and

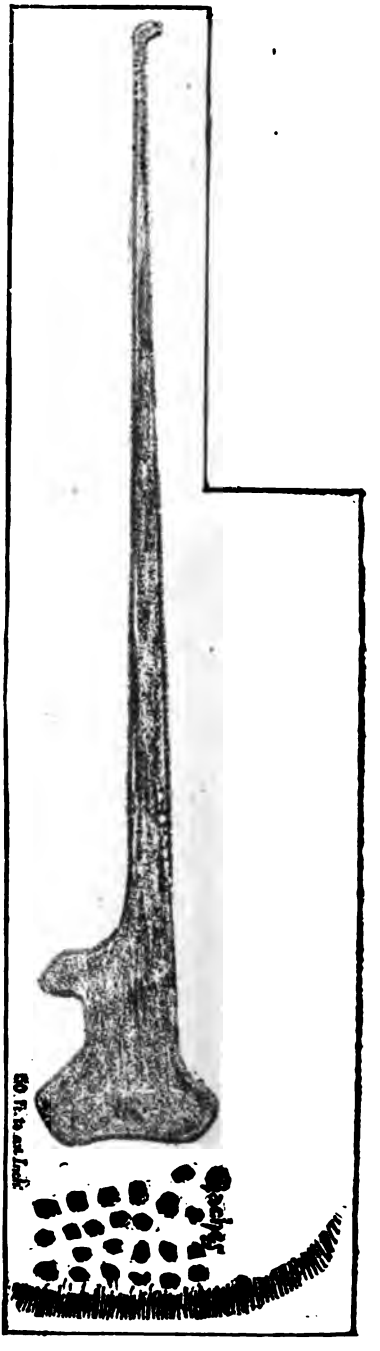

Fig. 79. Panther watching caches of grain at Great Bend. PEET.

tail would leave a vacant space, there were placed the caches, in which the stores of grain were hidden. The object of the effigy seems to have been to represent the animal as ready to hook and drive off any one who might approach the caches, the position of the head and tail and legs all giving the same idea.

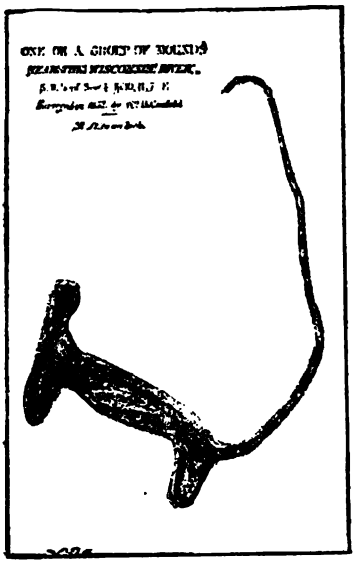

Fig. 80. Panther.

That storing of the grain in such an effigy as that gives the idea that the animal could protect may to us seem childish, but to the primitive people it was a powerful protector. Fear was the prevailing emotion and whatever might arise, a superstitious fear would serve as a guard and protector. The buffalo represented as guarding the caches of grain referred to above is situated at Lake Wingra, not far from the site of an ancient village between this bay and a ridge where were the burial mounds which belong to the ridge. The place where the effigy was built was surrounded by long lines of burial mounds and by various effigies and straight ridges, but the figure itself is isolated. It is an interesting effigy, both because of its peculiar shape, and because the double significance of the attitude of the animal is perceptible in it. The effigy represents one particular move of the buffalo when engaged, and is very expressive of danger, but the office work of the effigy is exhibited by the caches hidden away more than by the attitude itself.

III. A third peculiarity of the attitudes of the animals is their usefulness. It appears that the animal effigies are sometimes strangely distorted, the skill of the builders having been exercised in making the distortion expressive and at the same time useful. There are many animal effigies which have this peculiarity. Panthers are represented in effigy, but their bodies are unnaturally prolonged. Birds are represented in life-like shapes, but their wings are distorted, drawn out to a great length. Turtles are presented in their natural shape, but their tails are prodigiously lengthened. These distortions give rise to the idea that these effigies were designed for use. The imitations of nature could never lead to any such result. Great skill is exhibited in making the distortions expressive of the animal, but the skill was also exercised in making the effigy serve a pur-

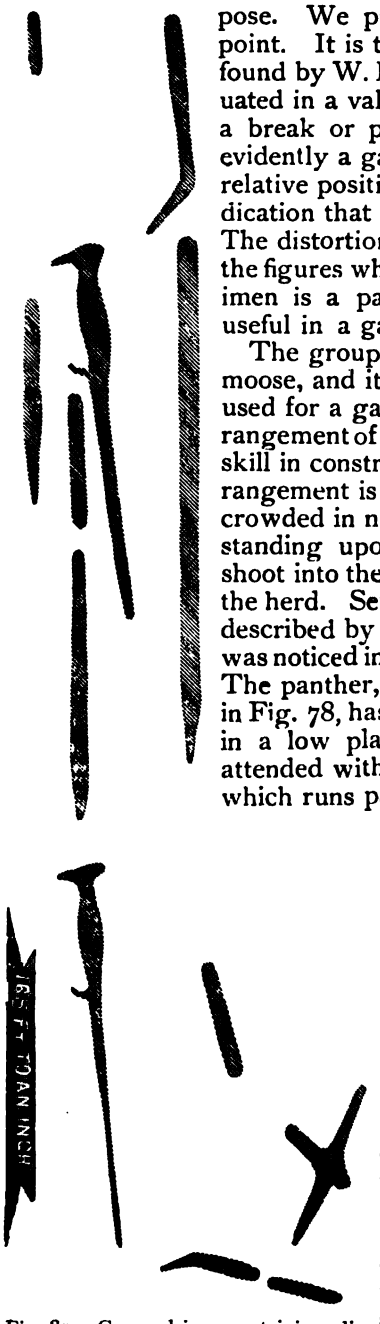

Fig. 81. Game drives containing distorted effigies of panthers near Honey Creek.

pose. We present a figure to illustrate this point. It is the figure of a group which was found by W. H. Canfield, at Honey Creek,* situated in a valley beneath high bluffs and near a break or pass through the bluffs. It was evidently a game drive, as the location and the relative position of the mounds give every indication that such was the purpose intended. The distortion of the effigies will be seen from the figures which are here given. The first specimen is a panther distorted so as to make it useful in a game drive.

The group was attended by the effigy of a moose, and it is probable that the locality was used for a game drive for a moose. The arrangement of the mounds indicates considerable skill in constructing traps for game. The arrangement is such that the animals would be crowded in narrow openings and the hunters standing upon the top of the mounds might shoot into them and carry great slaughter into the herd. Several such game drives have been described by Mr. Canfield. The same feature was noticed in the group on Lake Koshkonong. The panther, whose effigy has been presented in Fig. 78, has a tail 350 feet long. It is situated in a low place in the line of the bluff, and is attended with a long tapering ridge or mound which runs parallel with it, the two forming a drive or runway for the animals which might be driven across the bluff toward the lake. A similar game drive containing effigies with distorted or unusually prolonged bodies and tails, has been seen by Dr. Lapham, at Great Bend.† Here the effigies are panthers and turtles combined. There is but one tapering mound in the group. The game drive was here formed mainly by the effigies, the distortions of the animal figures having been such that they served the purpose of walls or long ridges. There are other purposes that distorted figures may be supposed to have served, but here the use is plain. These distortions of the effigies are interesting, as they prove not

* See Lapham's Antiquities, XLVII. † See Lapham's Antiquities. Plate XVIII.

only that a subtle significance was given to the animal figures, but what practical utility was an object in erecting. As an evidence of the usefulness of these ridges as a game drive or as a screen against the attack of animals, we give an incident which happened to an early settler. A Mr. Meggs, living at Arena, on the Wisconsin river, was out with his gun one morning when he came upon a bear. The result was that he was thrown into a panic and fled to the first place of refuge. Fortunately there was one of these artificial ridges near by. Hiding behind this, his trepidation gradually wore off and as the bear came near he actually shot and killed it. The use of the effigies for game drives is enhanced by the distortion. It makes the effigies longer so that they serve the same purposes as long mounds or ridges. It seems strange that the mound builders should have resorted to this expedient, but they evidently had a superstition that their animal divinities would aid them in shooting game or would protect them from the attacks of animals while they were hunting them. There was a combination however, of a mechanical contrivance with a superstition or charm, and their safety was owing as much, no doubt, to the contrivance as to the supernatural power.

The distortion of animal figures was not used solely for the purposes of the hunter. There are many effigies which seem to have served the purpose of defense as well as those of the chase. Probably there was a combination of hunting animals and defending villages as well as fencing garden beds and places of cultivation, for there were many effigies where all of these purposes could be served. We find distorted images of panthers in game drives, but we find also huge images of panthers surrounding village inclosures, the sides of the panther forming a wall of defense. In other localities we find the eagle, similarly situated, the different attitudes of the eagle having different offices; one shape appears as a guard to a village, another appears to have been used as a screen for hunters, still another served as a fence or guard to protect the fields, and still another as a guard to the burying places. The distortions of the eagle are as numerous as that of the panther. We give illustrations of this point.

There is a region where the eagle abounds in effigy and serves a more prominent place than any other effigy. This is on the Wisconsin river, near Muscoda. Here the author has discovered game drives, with the eagle unnaturally distorted as the essential part of the group. In the same vicinity there is a village site, the inclosure being surrounded by eagle effigies, each effigy, however, having its natural shape. In the same vicinity, burial mounds are guarded also by the eagle. Illustrations of this point are given, taken from a locality which has been visited by H. M. Canfield, who surveyed the

mounds at a n early day before the effigies were destroyed.

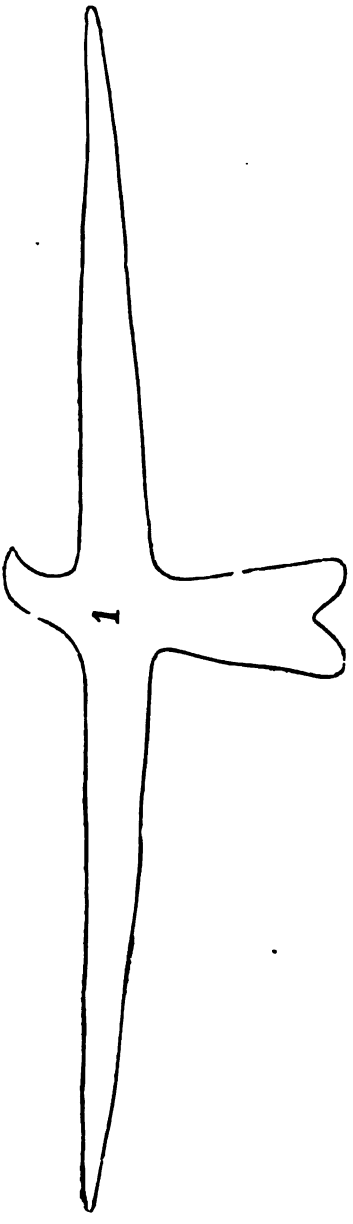

Fig. 82.

That the office of the eagle was that of a guard in game drives, as a defense to village inclosures, and as a wall to protect the passes in bluffs, may be seen from the specimens of distorted effigies. The wing of the eagle is distorted, sometimes unnaturally represented. We have referred to this in one case before. In the group of effigies at Mills' Woods, we noticed that the turtle effigies were placed as lookouts, that being their usual office. We noticed that the wings of the eagle stretched from one group of turtles to another, they having been unnaturally prolonged in order to make them extend the whole distance, the object of the extended wing having been to furnish a single unbroken wall of defense across the whole face of the bluff, other bird effigies in front of the eagle having only partially served the same purpose. There are many other places where bird effigies are seen in distorted attitudes, the wing being unusually prolonged. One such effigy has been seen by the author on the east bank of Lake Koshkonong. Here the bird effigy is attended with a long line of burial mounds, but the bird is situated between the burial mounds and the lake shore, the wings extending in front of the tumuli throughout the whole length

of the ridge. The length of the wings is here some 250 feet, one wing being nearly twice as long as the other. A similar bird effigy, with wings extended 1,000 feet, has been seen by the author on the banks of a small stream near Muscoda, the intent of the builders evidently having been to make the wings a substitute for a wall. Eagle effigies are not always distorted when used for defense, for at times three or four eagles will be placed in a line with the wings extending from one to another. The office of the eagle is, however, generally one of defense and the position of the effigy as well as the distortions of the wings frequently shows this purpose. Illustrations of this are given in the following figures.

In one locality the wings of birds form a barrier along the edge of a hill, and are so placed that they serve as a guard to the hill and as a guard to the pass up the bluff, which intervenes between them. This group has been described by W. H. Canfield. Fig. 83. It is situated at Honey Creek Mills, on the edge of Sauk Prairie. Dr. Lapham says, "On the east side of the creek commences a series of earth works of a very interesing character. The principal figure in the form is a bird, with a forked tail. They are on the margin of a beautiful level plain, a part of the great plain or prairie, called Prairie du Sauk. Several excavations made in building the dam have destroyed several of the works. The illustration of the group is herewith given.

Fig. 83. Eagle effigy at Honey Creek Mills.

It will be noticed that the eagles have their heads in opposite directions, but always toward the point of approach. One of them is placed on the bank of the stream and guards the bluff in that direction. Another is placed near a break in the bluff and guards the pass at that point. Still another overlooks the pass and protects the bluff on that side. A fourth, which is the largest of the group, has its wings extending to a great length along the brow of the bluff, and prevents approach from that side.

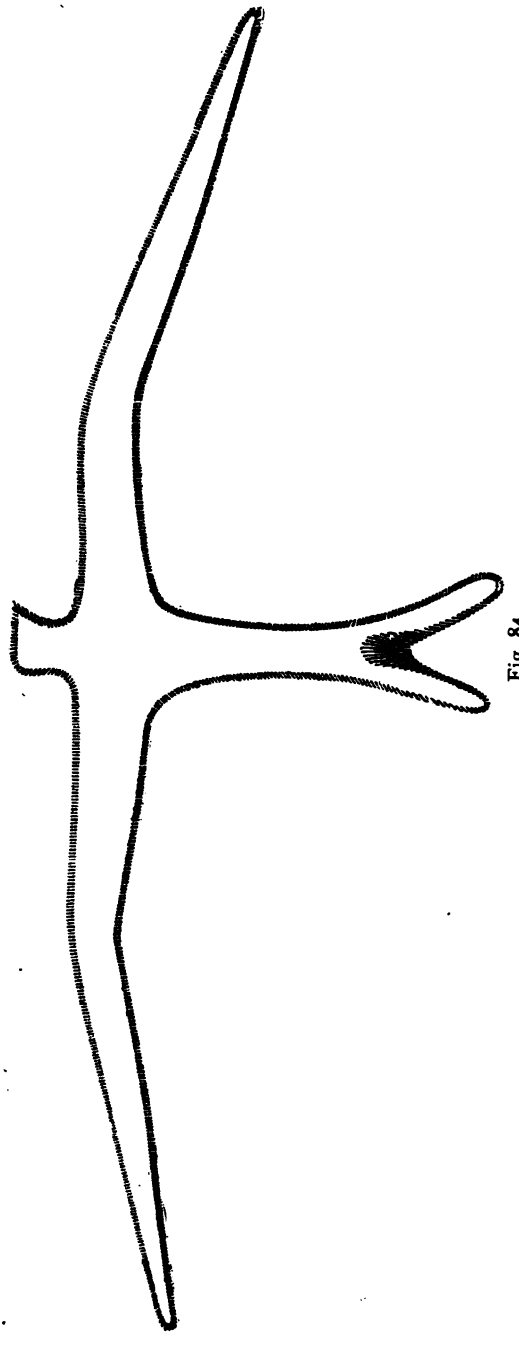

Fig. 84.

Other effigies were also arranged along the bluff beyond. There is no doubt that the intent of the group was to protect the village from approach by way of the stream. The immense size of the effigies indicate this as well as the situation.

In the vicinity of Muscoda there is a group of eagles, the most of them, however, having their wings partially expanded. They surround an inclosure which evidently was once used as a village site. On one side of the inclosure the effigies are placed with their wings parallel, forming a fragmentary and uneven line or wall. On the other side the eagles have their heads and bodies in a line, the wings forming the wall. No other effigy than the eagle is seen near the inclosure. There are a few long, straight mounds, which serve to protect the village.

The eagle is the effigy which guards

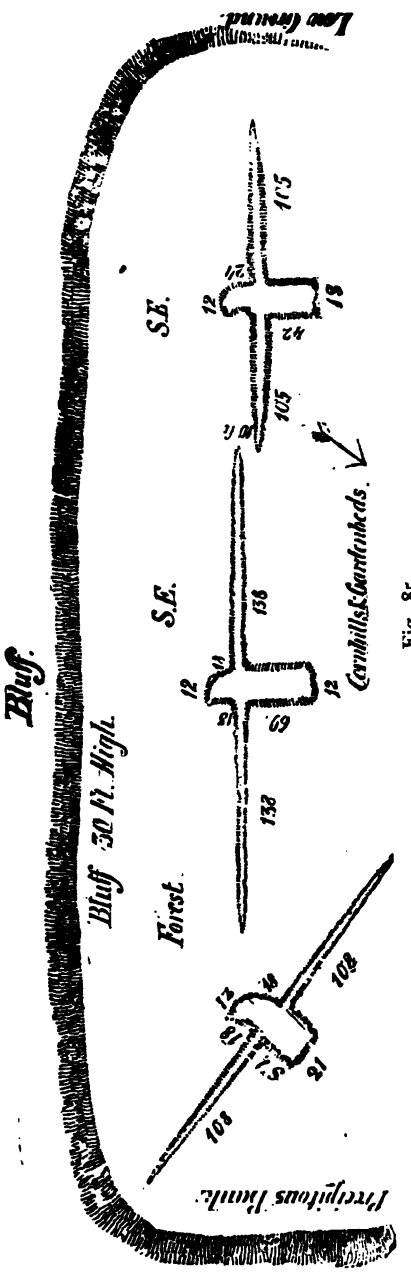

Fig. 85.

the place. The approach to the village is also guarded by eagles, for the banks of a stream which heads near the village site has eagles stretched along nearly its whole length until an extensive marsh is reached. These eagles, which guard the approach along the stream, are, however, built with their wings extended. One of them has wings nearly a thousand feet long.

Another place where eagles have been noticed having the purpose of defense is at the foot of the dells of the Wisconsin river. Here the writer, in company with Professor F. W. Putman and J. Kimball, discovered three eagle effigies, a figure of which is given. The eagles were stretched along at right angles on the bluff of the river, itself forming a wall between the river and a swail and guarding the bluff from approach. Within this wall the ground seemed to be broken as if there had been garden beds or corn fields. Possibly the effigies were designed as a fence to protect the corn fields. This was on the farm of Mr. Eaton. There were other mounds about a half mile north of the line, but they had been obliterated and could not be surveyed.

CORRESPONDENCE.

THE CAMEL AND ELEPHANT MOUNDS AT PRAIRIE DU CHIEN.

Editor American Antiquarian:

While prosecuting archæological researches in Vernon and Crawford counties, Wisconsin, lately, my attention was especially called to that part of your article on "Effigy Mounds, published in Vol. 9, of the Wisconsin Historical Society Collection, which treats of certain earthworks of that class, situated in Campbell's Coolie, not far from Prairie du Chien. The style in which your informant, Dr. Phene, treated them naturally created a curiosity which only actual examination could satisfy. I therefore visited this locality and made an instrumental survey of the best preserved of these remains — two so-called elephants. This place is two miles north of the center of Prairie du Chien and two and one-half miles east of the Mississippi river. There are three groups of effigies in the coolie proper; one at the mouth, one about one-quarter mile from Dousman's house (surveyed) and one near the spring, one-half mile off. I found the elephants to be the only figures with perfect outlines. In connection with them were one cross, three birds and twelve other mounds and embankments, but not worth surveying.

A camel at Campbell's Coolie might be somewhere on the surrounding bluff, for I do not believe that these "elephants" were the effigies Dr. Phene saw, but I rather think the "camel" was in some other coolie, as no one at Campbell's knew of any person having been there to see the groups I have just described. There are some mounds and embankments on the bluffs, but I could not find or hear of any effigy with them. People living a few miles further up, however, said that visitors in carriages had been seen one time in their neighborhood looking for such things. Nearly one mile west of these "elephants" is another ruined one, in a field near the Catholic burial ground.

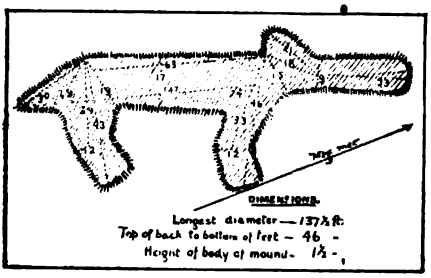

Fig. 1.

It occurred to me that perhaps you might think drawings of these "elephants," plotted from my field-notes, worthy of the attention of your readers, and I therefore send you three diagrams herewith. Two are large scale plans (1:400) of the ani-

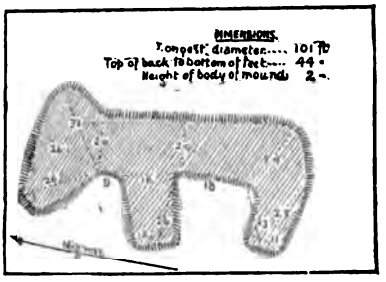

Fig. 2.

mal figures separately, the third is a little outline map, one-fifth the scale of the others (or, 1 : 2,000), showing the two creatures in their relative positions to each other, and to the slope of the contiguous hill.

These pictured outlines may be considered, I think, in the light of a trustworthy contribution to the material needed in the discussion of the subject of the co-existence of *man and mammoth* in this northwestern region; at any rate they are interesting subjects for speculation.

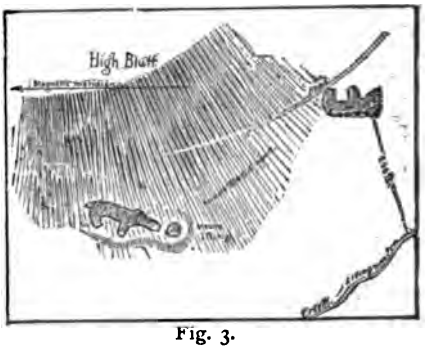

Fig. 3.

In my further travels I may meet with more such puzzles in antediluvian (?) zoology, in which case, if you desire, I will briefly notify you of the facts.

LANSING, IOWA, May 31, 1884. T. H. LEWIS.

STONE SNAKES IN MINNESOTA.

Editor American Antiquarian:

I send you an extract from a private letter from L. N. Tower, a gentleman in the employ of the Chicago and Northwestern R. R. at Tracy, Minn., who, at my request, visited the locality and made measurements, etc.:

"There is a snake on top of Medicine Butte (near Pierre, Dak.,) formed of stones about the size of a man's head. They are laid in two rows (varying in width apart to form a proper shape) from one to six feet, the whole being three hundred and fifty feet long. There are stones at the tail to represent rattles. They have been rudely carved. The eyes are two large red bowlders. Along the whole length, in the center of the snake, is a path where no grass was allowed to grow until last season. The Indians (Sioux) have now abandoned the Butte as a place of worship. There is about seventy or eighty acres of good land on the top of the Butte and most of it is covered with circles of stones that mark the graves of former chiefs."

CINCINNATI, Aug., 1884. E. A. ALLEN.

EDITORIAL NOTES.

HIEROGLYPHICS vs. PHONETICS.

It is singular how Antiquity becomes mingled with modern methods of life. History repeating itself. China is the battle field. The missionaries are now contending over a question which was settled in Egypt 3,000 years ago. The Hieroglyphics of China are the representatives of the old and decaying civilizations of that empire. The new and modern culture is represented by a Phonetic alphabet. The question is whether the missionaries shall retain the Hieroglyphics or substitute a Phonetic alphabet for them. A pamphlet received from Rev. H. Brown, D. D., contains the following sentiment: "The Hieroglyphics of Assyria, Babylon and Egypt sunk to oblivion in their contest with an alphabet popularizing the literature that had been hidden in mouldy temples and in the caskets of a privileged class. There was, no doubt, just as much opposition then to opening the mysteries of literature, science and religion to the common people, through an easily acquired and rapidly written phonetic system, as there now is to the printing of Japanese scriptures and other religious works in the native phonetic character — the "women and children's" writing, as it is contemptuously called. But the hieroglyphics went down never to come up again, except as curiosities for learned antiquarians to decipher. So will it be with the hieroglyphics of China, venerable and wonderful as they are, challenging universal admiration, and presenting the most remarkable example of ingenuity, literary toil and patience that the world has ever seen. But no scheme of picture writing can co-exist with modern civilization. The masses can never be chained down to a system that requires eight or ten years to obtain even a partial knowledge of the characters necessary for ordinary reading."

INSTRUCTIONS ON MOUND EXPLORING.

Dr. Charles Rau has sent us a printed copy of the paper which he read at the last session of the National Academy at Washington, in which instructions are given on mound exploring with a special reference to the points which should be observed. We notice that the preservation of the monument occupies a prominent place in the instructions. The importance of making careful surveys of the works is dwelt upon. The

collecting of relics seems to be a subordinate matter. This puts the subject in the right light. We are glad to know that the pamphlet is to be issued as a circular by the Smithsonian, and hope that it may be so thoroughly read that its instructions will be heeded.

FROM May 23d, to May 30th, the Congrés Archéologique de France, held its fifty-first session in the department of the Ariège. The centers of excursions were Pamiers, Foix, and Saint-Girons. The programme embraced the archéology of all periods, from the prehistoric period to the Renaissance; also including religious, civil and military architecture. Philology was insisted on in the study of the different idioms and dialects, and in the Etymology of local names, in this section Ethnology also finds its place.

In June, a Congrés Géographique was also held in Toulouse, one section of which was devoted to Spanish and Pyrenean Geography and Ethnology. We hope much from the labors of these two meetings, especially as the department of the Ariège is the least known district of the French Pryenees.

The last number of the Boletin of the Royal Academy of History of Madrid, contains a most interesting article by Rev. P. F. Fita, on the Roman inscriptions in the diocese of Barbastro, in Aragon, on the southern slope of the Pyrenees. Several of these inscriptions are new or from stones or monuments only lately discovered. They were many of them erected by heirs (h(eres) ex t(estamento), and seem to give evidence of the very early existence of the actual " derecho consuetudinario " of Upper Aragon, according to which (as in the South Slavonic tribes cf. Early Law and Custom, by Sir H. P. Maine, 1883, p. 245. seq.) the heir could be chosen from any member of the house-community, son or daughter, uncle or aunt, or even one merely adopted into it (cf. Derecho Consuetudinario del Alto Aragon, por Joaquin Costa Madrid, 1880). Among the Basques the rule of absolute primogeniture whether female or male seems to have prevailed, at least in later times. The attention of American readers may be called to the " Memoria histórica, politica y económica de la Provincia de Misiones de Indios Guaranis," now being printed for the first time in this monthly *Boletin*.

W. W.

THE American Society of France at its meeting of February 18, discussed the interesting question of the most ancient dates in the history of South America.

M. Castaing, who had undertaken the study of this question, began by observing that South America, having scarcely known and not having practiced any kind of writing, it is from tradition only that we can seek for information on its history. This tradition was collected in the early years of the Spanish conquest, during the XVIth century; but certainly comparing it with the chronology of Mexico, this fact constitutes no inferiority, since the monuments of the latter country, both pictured and written, date scarcely higher. Nevertheless, M. Castaing has not thought fit to employ the affirmative method habitual with the Mexicanists; he will not present a complete chronology like that which classical studies have enabled scholars to establish for the antiquity of the old continent; but he asks the Society to follow him in his researches according to the retrospective method.

NOTES ON CLASSICAL ARCHÆOLOGY.

THE PAINTING OF STATUES.—The question, "Shall we Paint our Statues?" is under discussion among antiquarians in Germany. George Treu has written a brochure with this title in which he sums up the answer of the past to the question as follows: "It is a proved fact that all antiquity, including the Graeoo-Roman epoch, and the Middle Ages, as a general rule, painted and enlivened their statuary, if not of bronze, with colors; and that polychromy was first banished from the plastic arts through an archæological misunderstanding in the Renaissance period." G. Semper wrote some years ago: "It is extremely difficult to convince people that the ancients could have covered so noble a material as their white marble with colors. But apart from the oldest monuments of wood and clay, the most of the Greek temples, and all of the oldest, consisted of a gray limestone, or of porous stone, and were covered with a stucco before the surface was painted. White marble was chosen afterwards, and only then where it was close at hand, or later in buildings of extraordinary splendor, and then especially for the following reasons: 1. Because, on account of its hardness and fineness it was capable of more exquisite working. 2. Because it made stucco superfluous. The last layer of all antique stucco-surface consisted of a fine marble dust, which appears to have been necessary for the encaustic painting. But to marble temples painting could be applied at once, and the colors were more brilliant and more lasting. This is the reason why few traces of ancient painting remain upon temples which were covered with stucco, while at Athens and in all marble monuments the colors still adhere. 3. Because a great value was placed upon the costliness of the material. The unseen substance must correspond to the external splendor.

"If one would convince himself how unsightly and offensive a marble structure becomes when bare in a southern clime, he has only to view the Cathedral of Milan, whose whiteness the sun renders blinding, the shade icy cold. The golden crust of Greek monuments is lacking. This crust is usually regarded as the result of time, but it is nothing else than the residue of ancient painting. As regards sculpture, wherever it formed a part of the architectural structure it could not remain colorless where all else glittered with colors. And so it is found. With isolated statues, the case was different. But here, too, the surroundings were taken into account. Under the open air, in the midst of green leaves and grassy lawns, pure white was an advantage. But the tendency towards color may be seen from the number of bronze and gilded statues which were scattered everywhere."

In order that more exact knowledge of the coloring of statues among the ancients may prevail, the Archæological Society of Athens will soon publish some thirty colored facsimilies of the sculptures recently recovered upon which the traces of painting are most vivid.

THE PAPYRI FROM THE FAYUM.—These Papyri, of which some account was given in the second number of the ANTIQUARIAN of this year, continue to be unrolled at Vienna with success, and with continual additions of important documents. In the department of Greek, the announcement is made that the remains of a papyrus roll contain a hitherto unknown polemic speech against Isocrates, written in the finest Alexandrian calligraphy. Another piece is added to that already discovered of the history of Thucydides, containing scholia also, and some notable readings. The 1st, 2d, 4th, 8th, 11th and 17th book of the Iliad, and a paraphrase of the 4th book are represented, though the extent of each is not great. Fragments of an æsthetic treatise of the 2d century, A. D., and a whole philosophical dissertation in the style of Aristotle, fragments from the trimeters of a dramatic writer, patristic works, one of the oldest Christian Manuscript works, fragments from the Old and New Testament, Genesis, Isaiah, the Psalms, the Evangelists (4th to the 6th century), numerous documents of value for chronology, giving dates according to the Macedonian and Egyptian methods, etc., are mentioned in the list. Of Latin papyri about ten only have thus far been found, but some three hundred Sassanid-Persian are enumerated, some on papyrus, some on parchment, some on leather. The Arabian papyri mount up to one thousand, among which, twenty-five documents have the original lead seals attached.

CYPRIOTE INSCRIPTIONS.—Professor Sayce writes to the *Berlin Philolog. Wochenschrift*, that in addition to the forty-four Cypriote inscriptions which he copied at Abydos, he also found one at Thebes, in one of the graves in the Valley of the Kings. The most of these inscriptions, as was to be expected, consist of proper names only;

but one reads, "Aristocles, the Selaminian, made me;" another, "SoFes, the son of TimoFanax, an Achæan." In the last, the word Achæan has the F before the last syllable, thus supplying for the first time, what Curtius had doubted, an instance of the digamma in this word, corresponding to the V of the Latin *Achæus*. Another proper name has the form Keramius. Prof. Sayce mentions a form of the 3d sing. impf. of the verb "to be," as occurring also in Arcadian, thus bringing additional proof of the connection of the two dialects. The same form, however, is far more frequent in Doric.

DISCOVERIES IN EGYPT — M. Maspero, during his official Nile trip this year, discovered an entire necropolis at Khemnis or Panopolis, in Upper Egypt, whose tombs had never been opened. So far it appears to belong to the Greek period, and the sepulchres are great family vaults, rather than isolated tombs. Five which were opened under Maspero's supervision contained 120 mummies. He thinks that the cemetery must contain 5,000 or 6,000 mummies all told. Perhaps the main interest attaching to the discovery is the fact that it is in tombs of this period that papyri containing fragments of Greek writers are found, and as this town was a favorite resort of Greek settlers, hopes are entertained that something of value may come to light.

At Sakkarah an inviolate tomb of the time of Pepi I., of the VI Dynasty, was found to contain three sarcophagi, of which two were of wood and one of limestone. The last was covered inside and externally with paintings, and with religious texts written in a fine hieratic hand.

Mr. Petrie has discovered that the necropolis of the city of San was without the walls, not within as Mariette supposed from some graves he found when excavating there some years ago. Most of the tombs have been rifled. In the vicinity of the temenos-wall of the great temple, which was eighty feet in thickness, Petrie has lighted upon a small Graeco-Roman chapel containing some tablets in which Ptolemy Philadelphus and Arsinoe are represented in the act of adoration to Khem, Horus and Buto.

Mr. Petrie's soberness of judgment is so great that the following account from his own pen may be relied upon: "In the course of the excavations at San (Zoan-Tanis) there have been disclosed several portions of a red granite colossal statue of Rameses II, which, when whole, must have been the largest statue known. It appears to have been a standing figure of the usual type, crowned with the crown of Upper Egypt, and supported up the back by a pilaster. Judging from the dimensions of the various parts, such as the ear and the instep, and comparing the proportionate size of the cartouches (which are three feet wide), with those engraved on other statues, this colossus must have been 98 feet high, from foot to crown. Together with its pedestal, which we can scarcely doubt was in one piece with it, it would altogether be about 115 feet high. The great toe measures eighteen inches across. That it was a monolith is almost certain from the fact that all the largest statues are without any joint; nor does this seem incredible, since there are obelisks nearly as long. But this may claim to have been the tallest and heaviest statue that we know of, as the figure alone would weigh 700 tons, to which the accessories would add as much again. A total weight of 1,200 tons is most likely under, rather than over, the actual sum. The statue has been cut up into building blocks by Sheshank III, and used in the construction of the great pylon; hence only small pieces of a few tons each are now to be seen."

DISCOVERY OF PITHOM — R. S. Poole writes to *The Academy* that Dr. Brugsch has an article in the *Deutsche Revue*, in which he fully accepts the discovery of Pithom by M. Naville, with its important result in determining a position in the route of the Exodus. "He does so with his usual frankness, little caring for the modification of his own views, and rejoicing in the success of his eminent colleague. The question of Pithom has thus finally passed from the domain of controversy into that of established fact."

EPIC CYCLE — D. B. Monro, the Homeric scholar, and Provost of Oriel College, Oxford, has an acutely argued paper in the *Journal of Hellenic Studies*, Vol. iv. No. 2, "On the Fragment of Proclus' Abstract of the Epic Cycle Contained in the Codex Veenetus of the Iliad," in which he sums up his results as follows: "In the earlier periods of Greek learning — from Plato and Aristotle to Aristarchus and his followers — there is no trace of the 'Epic Cycle,' or of any similar poetical compilation. The word KYKLOS occurs as the name of a particular kind of short poem, and also in the title of a prose work containing a comprehensive survey or abridgment of mythical his-

tory. The adjective KYKLIKOS has the general sense of 'conventional,' and is also used as the name (or nickname) of an Alexandrine school of poetry. The *scriptor cyclicus* of Horace is one of this school, which has nothing whatever to do with the early post-Homeric poets, called 'Cyclic' in our histories of Greek literature." At the May meeting of the Hellenic Society, Mr. Munro read another paper in continuation, on the Epic Cycle, giving a summary of the Aethiopis and Iliou-Persis of Arctinus, and of the Little Iliad, and showing how they carried on the story of the Iliad with interesting deviations, and additions of distinctly post-Homeric character.

THE Archæological Museum at Cambridge, England, was officially opened to the public on the 6th of May. Cambridge is the only British university in which classical archæology has obtained a fixed place in the scheme of classical teaching, and much of the impulse towards the gathering of the casts and the foundation of this new museum has been due to the enthusiasm and keen artistic insight of Dr. Charles Waldstein, a former native of New York and student at Columbia College, who has been lecturing for some years at Cambridge upon archæology with remarkable success, and has recently been appointed director of the Fitzwilliam Museum to succeed Prof. Sidney Colvin, who has gone to the British Museum. Dr. Waldstein will also have charge of the collection of casts in the new museum. The building comprises a large lecture room, a library, apartments of the curator, and rooms for the collection of casts and the local collection of the Cambridge Antiquarian Society. On the occasion of the opening, Prof. Michaelis, of Strassburg, wrote to Dr. Waldstein in part as follows: "In Germany, since the days of the venerable Welcker, we are fully aware that such a museum (as yours) is as necessary a supplement to archæological lectures as a laboratory is to lectures on physics or chemistry, or as an hospital is to oral instruction of medical students. I have little doubt that your example will soon be followed by the sister universities in your country, and that your museum of casts will in future days be regarded in Great Britain with a feeling of grateful veneration similar to that with which German archæologists regard the museum of the Bonn University, founded about sixty years ago, in which many of our living archæologists have acquired their first personal knowledge of the masterpieces of Greek art."

NOTES FROM ORIENTAL PERIODICALS.

By PROF. JOHN AVERY.

WHERE DOES THE SOMA GROW?—Under this title Professor Roth, of Tubingen, communicates to the *Journal of the German Oriental Society* some results of a search for the home of the plant whose juice formed so important an element in the religious ceremonies of the ancient Hindus. The Soma, was not, the writer thinks, indigenous to India; and since neither the plant nor its expressed juice would suffer distant transportation, if we could find it growing anywhere at the present day, that spot must be regarded as the home of at least the eastern branch of the Indo-European family before it settled the plateau of Iran or the valley of the Indus. The reason that this clue has not been followed more carefully hitherto is due partly to the feeling that the qualities ascribed to the Soma-plant were the product of a religious phantasy, and that its juice, unlike that of the grape, was never a common beverage; and partly to the danger attendant upon exploration in the countrtes north of India.

About two years since, Dr. Albert Regel, a botanist in the service of the Russian government, was directed, at the instance of Prof. Roth, to search the region between the upper waters of the Oxus and the Jaxartes and their confluents, for a plant answering to the description of the Soma. If it had ever grown there, the chance was good of finding it still, since its home was upon high elevations, not easily reached, and its destruction for religious uses had long ago ceased. The search was carefully made by Dr. Regel, who was stationed about two hundred miles south of Tashkend, with the result of assuring him that no plant like the Soma grew there at the present time. He, however, saw reason to believe that farther east; the little known region of the Hindu Kush was far richer in floral treasures, and it is there, if anywhere, that we may hope to discover the Soma-plant.

THE ORIGIN OF THE INDIAN ALPHABET.—We have already referred in this journal to some of the discussions regarding the origin of that one of the old Indian alphabets which was the mother of most of the systems of writing which have since been current in India. A very useful summary of the different views that have prevailed, with brief criticisms of each, is furnished by Mr. Cust, in the *Journal of the Royal Asiatic Society* for July. Of the two alphabets, whose ancient forms have been preserved for us in inscriptions, the northern one is admittedly of Semetic origin; it is in regard to the south-Indian letters that scholars are not in accord. Two principal theories have been advanced, each championed by Orientalists of the highest reputation. The first one, held by such scholars as Edward Thomas, Rajendra Lala Mitra, Professor Goldstucker, Professor Lassen and General Cunningham, assumes a native origin—either Aryan or Dravidian—of the South-Indian alphabet, though some, like Professor Dowson, would admit that the *idea* of phonetic symbols may have come to India from the west. Against this view it is urged that we ought to find in India, as in Egypt, inscriptions in the ideographic stage, showing a gradual development of the art, but no trace of such has yet appeared.

According to the second theory, the Southern alphabet was brought to India from the West, though there is no general agreement about the channel through which it came. James Prinsep, writing as long ago as 1837, thought that he could trace the Sanskrit letters back to the oldest form of Greek. Most scholars, however, who hold the second theory go back more immediately to a Semitic source. Prof. Weber believes that the Indians borrowed their letters from the Phenicians at about the same time that the Greeks did, that is, between the tenth and the eighth centuries B. C. Mr. Rhys Davids thinks that letters may have been first brought to Ceylon by Arab traders, whence they were transmitted to the continent of India. Dr. Burnell was inclined to look to an Aramaic type of Semitic, used in Persia, as the immediate source. Dr. Cust favors the idea that the Himyaritic language of southern Arabia gave letters to India. It can be shown that commerce was carried on between Yemen and the Malabar coast at a very early period, providing, thus, an easy channel for the transmission of the ancient culture of Arabia. Both Dr. Burnell and Mr. Cust have recognized the serious objection to this view, that no Himyaritic inscriptions have yet been found so old as those of southern India. Southern Arabia, however, has never been so fully explored, and older monuments may yet be discovered. A definite settlement of the origin of the oldest Indian alphabet is beset with special difficulties, since Hindu history and even legend are utterly silent regarding it. Unless some new light is shed from an unexpected source we must be content to rest our opinion upon probabilities, and these are certainly in favor of a Semitic origin.

THE NEW ORIENTAL GUEST HOUSE IN ENGLAND.—The last number of Trubner's Record contains a view and description of a building which has been recently purchased to serve as a university, a museum, and a place of residence for natives of India who desire to enjoy temporarily the benefits of western civilization—especially for those who belong to, or are preparing for some branch of government service in their native land. The building, which is situated about twenty-four miles from London, was originally designed as a retreat for stage actors; but failing in this, it has been secured by Dr. Leitner, in co-operation with other gentlemen in England and India, for the purpose above described.

A great obstacle, in the view of natives, to leaving India, is the loss of caste and consequent impairment of social influence after their return. To obviate this objection, separate parts of the building are assigned to Hindus, Sikhs, and Muhammadans, where each person can have facilities for cooking and eating, according to the rules of his caste.

Professorships are to be founded, by which not only can Orientals be instructed in the science, literature, and art of the west, but Europeans can acquire the living languages of the east. The institution is affiliated with the Panjab University, and will conduct its examinations and confer its degrees in Europe. A museum is also projected, which shall illustrate the industrial arts, the antiquities, the literature and the ethnology not only of the Panjab, but of the whole eastern world. The scheme is a noble and far-sighted one, and, if carried out with a zeal commensurate with the wisdom of its conception, will be most beneficient in its results.

THE VEDDAS OF CEYLON.—This people, which is regarded as one of the lowest specimens of humanity, has been frequently mentioned by travelers and scholars, but, as is often the case with savage tribes, the information has been lacking in precision and completeness. The best accounts that we have seen are one by Mr. B. F. Hart-

shorne, which first appeared in the *Fortnightly Review* for March, 1876, and was reprinted in the *Indian Antiquary* for November, 1879, and a monograph of 143 pages by Prof. Virchow, of Berlin, published in 1881, in which he brings together and digests all the accounts hitherto given of the Veddas, and compares their physical and mental qualities with those of their neighbors.

The Veddas, or Weddas, as we are told the name should be written, occupy the flat and heavily wooded districts east of the center of the island, comprising an area about ninety miles long by forty wide. Owing to their wandering life, any estimate of their numbers must be taken as a guess. Earlier writers put them as high as 8,000, but later accounts reduce the number to a few hundreds. They are divided into Village and Jungle-Veddas, and these two classes, though undoubtedly belonging to the same tribe, have been so differently affected by dissimilar modes of life, that they have lost all recognition of kinship and all tribal affection for each other. It is the forest clan that has best preserved the distinctive features of the people.

Their name, which signifies "archer," gives a hint of their mode of life. They do not construct even the simplest hut, but find shelter from the weather under a rock or within a hollow tree. They do not till the soil, though all the other rude tribes of India are accustomed at least to *jhum* culture, which consists in felling and burning the jungle, and scattering seeds in the ashes. Still, they are not reduced to the helplessness of brutes; for, besides the fruits of the jungle, their bows are used with much skill to provide them with the flesh of monkeys, deer, wild boars, and even elephants. No flesh is eaten without first having been cooked. They drink only water, and, though fond of chewing the bark of certain trees, cannot be induced to use tobacco. Fire is kindled by the friction of two pieces of wood, and by the use of flint and steel. Besides the bow, they are usually equipped with an ax, which, as well as the tips of their arrows, is procured by barter from their civilized neighbors. There is no trace of flint or stone implements found among them, though their name for ax implies that it was once constructed of stone.

The Veddas are rather below the medium stature, the tallest adults examined measuring a little more than five feet and the shortest about four feet. Their features are said to be decidedly non-Aryan, being characterized by flat noses, thick lips, short thumbs, and dark complexions. They are one of the few tribes of mankind who never laugh; except in the case of several half-civilized individuals who had been specially trained for the purpose, all efforts to excite their risibilities have failed. What they lack in laughter they make up in tears. According to Mr. Hartshorne, these people have no ideas of numbers, even the smallest, and do not use their fingers for the purpose of counting. They do not practice polygamy or polyandry, as do the Singhalese; but marriage is allowed with sisters, except the eldest, and with daughters. They show great affection and constancy for their wives.

Their religious notions are extremely vague and simple. They have no temples, priests nor festivals; but believe that the dead become malicious spirits; hence when a Vedda dies his ghost is appeased by an offering of food, which, however, is ultimately consumed by the mourners. No confident statement can be made regarding the race-affinities of the Veddas. They have been classed by different scholars with the Negritos of the South Seas, the Aryans and the Dravidians of India, and with an earlier population that is supposed to have overspread the country before the incoming of either of the other races. Prof. Virchow is inclined to the last view.

We take the following from advanced sheets of the forthcoming report of the American Antiquarian Society.

FRED. W. PUTNAM, Curator of the Peabody Museum of American Archæology at Cambridge, made a few remarks bearing upon the antiquity of man in America, based upon objects recently received at the Museum.

He presented photographs of four blocks of tufa each containing the imprint of a human foot. These blocks were cut from a bed of tufa sixteen feet from the surface, near the shore of Lake Managua, in Nicaragua, and were obtained by Dr. Earl Flint, who has been for several years investigating the archæology of Nicaragua for the museum and has forwarded many important collections from the old burial mounds and shellheaps of that country. The volcanic materials above the foot-prints probably represent several distinct volcanic eruptions followed by deposits of silt. In one bed, apparently of clay and volcanic-ash, six and one-half feet above the foot-prints, many fossil leaves were found. Specimens of these are now in the museum and their specific determination is waited for with interest. While there can be no doubt of a great antiquity for these foot-prints, only a careful geological examination of the locality and

a study of the fossils in the superimposed beds will determine whether that antiquity is to be counted by centuries or by geological time.

He also exhibited a portion of the right side of a human under-jaw which was found by Dr. C. C. Abbott in place in the gravel, fourteen feet from the surface, at the railroad cut near the station at Trenton, New Jersey. It will be remembered that in this same gravel deposit Dr. Abbott has found numerous rudely made implements of stone, and that in 1882 he found a human tooth about twelve feet from the surface, not far from the spot where, as he states, the fragment of jaw was discovered on April 18, 1884. Both the tooth and piece of jaw are in the Peabody Museum, and they are much worn as if by attrition in the gravel. That they are as old as the gravel deposit itself there seems to be no doubt, whatever age geologists may assign to it, and they were apparently deposited under the same conditions as the mastodon tusk which was found several years since not far from where the human remains were discovered. While there is no doubt as to the human origin of the chipped stone implements which have been found in the Trenton gravel, a discovery to which archæology is indebted to Dr. Abbott, the fortunate finding of these fragments of the human skeleton add to the evidence which Dr. Abbott has obtained in relation to the existence of man previous to the formation of the great Trenton gravel deposit.

BOOK REVIEWS.

Annals of Fort Mackinac, by DWIGHT H. KELTON, U. S. Army. Island edition.

This little volume contains an account of the earliest inhabitants of Mackinoc, the Mishiniki, of the early French visitors, of Father Marquette, and the Algonquin village, the annals of the Island from 1534 to 1882, a description of the antiquities including the old forts, and a brief collection of the legends still preserved among the native inhabitants. One legend contained in it has interested us. The rabbit's back is the name of a bluff, which when seen from a distance, resembles a sitting rabbit. The Pagan Indians were in the habit of offering sacrifices to the spirit which resided in the bluff, showing how prevalent the animism was which transformed nature into a divinity. The spirit of amimals frequently being supposed to possess rocks, islands and hill-tops, the book is a valuable one in many respects, the arrangement, however, might be improved. The lists of names of officers and other statistics, would have been better if placed at the close of the book, and the legends would have been more attractive if more of them had been given. The views prepared are attractive, and the contents are instructive.

By-Paths of Bible Knowledge, III. Fresh Lights from the Ancient Monuments, by A. H. SAYCE, M. A. A sketch of the most striking confirmation of the Bible from recent discoveries in Egypt, Assyria, Palestine, Babylonia, Asia Minor.

Dr. Sayce has given in this little volume, a very valuable resume of recent discoveries in the east, as he is well prepared to do from his acquaintance with the archæology of the region. The volume contains a description of the Cuneiform alphabet, and the discovery and interpretation of Bilingual text. The creation tablets are also described as well as the moabite stone. The Siloam inscription is also given in fac-simile. A brief account of the Hittites follows, and a review of Assyrian sculptures. It is an excellent review of the work which has been done by archæologists, and should be owned by every Oriental scholar.

Comparative Vocabularies of the Indian Tribes of British Columbia, by W. FRAZER TOLMIE and GEO. M. DAWSON, D. S.

The geological survey of Canada has done good service in collecting the vocabularies of the English language of British Columbia. The collecting is the joint work of Mr. Geo. W. Dawson and Mr. W. F. Tolmie. The tribes represnted are first, the Thlinkeet, Haida, and Teshinsian, the Nisknalli, the Chinook, the Tinneh, the Selish, and several others, which we will not mention. The volume is attended with maps of the British Columbia, in which the tribes are located, and which are colored according to the languages prevalent.

The Folk-Lore of Yucatan, by DANIEL G. BRINTON, M. D. From the *Folk-Lore Journal*. Part I, Vol. 8.

In the *Folk-Lore of Yucatan* we find what a power is nniversally ascribed to the magicians of transforming themselves into beasts. The same, intercourse between the stars and heavenly bodies and human beings. One of the most celebrated kings of the Kiches, of Guatemala, it is said, every seven days descended to the sky, followed the path of the abode of the dead, put on the nature of a serpent, an eagle, and again of a tiger, and then became coagulated blood, going through this round every seven days. There is a new version also, among the Mayas, as to to the power of salt. In this case a woman was in the habit of going to the moon, but the throwing of salt upon her destroyed the charm.

Papers Concerning Early Navigation on the Great Lakes, by WILLIAM HODGE. "Capt, David Wilkinson," "The Pioneer Steamboat." Buffalo Historical Society.

The reminiscences of Wm. Hodge in reference to early navigation, have considerable historical value. The Walk in the Water was the first steamboat on the lakes. It was in the habit of starting out with six yoke of oxen, but when it escaped from the current of the Niagara River, true to its name, it ran, or rather walked, but a few seasons, and gave place to more pretentions vessels. The period covered by the narrative is that which elapsed between 1813 and 1837, a very interesting period in the history of the Interior.

Navajo Silversmiths, by Dr. WASHINGTON MATHEWS, U. S. A.

Dr. Mathews has described the method of work common among the native silversmiths of the west. The one point is noticeable and that is the natural skill in drawing and ornamenting exhibited by the natives. As a rule he says, they find approximate centers with the eye, and engrave all figures by the unaided guidance of this unreliable organ. It illustrates the probable method which is common among the natives of prehistoric times.

Okadaira Shell Mound at Hitachi, being an appendix to Memoir, Vol. I, Part I, of the science department. Tokio Daigaku by I. IIIIJIMA and C. Sasaki, students of Biology.

The shell mounds of Japan have been described by Prof. Morse. An appendix to Mr. Morse's pamphlet has been prepared by two Japanese students. The appendix has fewer words in the letter press, but more plates and illustrations. The two together form a valuable contribution to science.

NEW PUBLICATIONS.

PINART, ALPH. L., Catalogue de Livres rares et precienieux.—This is the catalogue of the explorer's linguistic, ethnologic and anthropologic library containing 1440 numbers, among them 975 rare and valuable books on America; it includes the Abbe Brasseur's collection of manuscripts and printed books. The auction sale will take place at No. 28 Rue des Bons Enfants, *Paris*, from Jan. 28 to Febr. 5, 1884.

BUSCH, MAX, D. Med.: die Wotjaken, eine ethnologische Studie. Stuttgart, 1882, Cotta publisher, 4to., pp. 185 and two col. plates. Contains interesting legends, myths and songs of that Turanian nation.

TRANSACTIONS of the Anthropological Society of Washington, D. C. Vol. II. from Febr. 7, 1882 to May 15, 1883. Washington, 1883, 8vo., 211 pages. Illustrated.

CURTIS, WILLIAM E., Children of the Sun. Chicago, 1883, pp. 154, 16mo.—Describes a visit to the Zuni Indians, New Mexico.

FLETCHER, ROB., Tattooing among Civilized People. Washington, D. C., 1883, pp. 27. Separately printed from the above "Transactions."

FLETCHER, ROB., Experiments on Serpent Venom, 8vo., pp. 16. Separately printed from Amer. Journ. of the Medical Sciences.

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VOL. VI. NOVEMBER, 1884. No. 6.

THE RACES OF THE INDO-PACIFIC OCEANS.

POLYNESIANS.

The vast island-world which, as a southern extension of the continent of Asia, has been properly called Australasia, and which may be roughly defined as lying between the 95th degree of east and the 138th degree of west longitude, and between the 22d degree of north and the 47th degree of south latitude, has been the home within historic times of at least four distinct types or races of men. Three of these races are black, or very dark in complexion, and are called respectively Papuans or Melanesians, Negritos and Australians — the last including the extinct people of Tasmania. The fourth is a lighter, cinamon colored race, and is usually divided into three affiliated groups, which are known as Polynesians or Mahoris, Micronesians and Malayans.

It is our design, to sketch in a popular way the physical characters, the languages, the customs and beliefs of these types of mankind scattered over an area exceeding that of Asia itself. There is much in their past history and ethnic connections that is still and perhaps will always remain a subject of controversy; but we shall give little space to these discussions, confining ourselves to facts and theories which are generally accepted by scholars. In some parts of the field the efforts of missionaries and the spread of commerce have wrought so great a transformation in the occupations and beliefs of the people that, as our purpose is to show them in their primitive guise. the picture must be sometimes understood as portraying the past, though not a remote one.

We will begin our survey with the lighter race, and with its

easternmost branch. If one will draw a line from New Zealand northward to Hawaii, curving it to the west so as to include the Ellice or Lagoon Islands, but excluding Fiji, all the islands east of that line will represent Polynesia, properly so-called. The principal groups scattered over this great expanse of ocean are Hawaii or Sandwich, Marquesas, Paumotu or Low Archipelago, Society, Cook, Tibnai or Austral Ellice, Tokelan or Union, Samoa, Tonga, and New Zealand. Besides a few other groups of inferior importance, two single islands of deserved special mention — Pitcairn, where the descendants of the mutineers of the Bounty still reside, and Easter, whose architectural remains have greatly puzzled archaeologists.

It is necessary to remind the reader that the name Polynesia "many islands," though most appropriately applied to the innumerable islands and islets that dot the eastern Pacific, is often extended in popular usuage as far west as New Guinea, and is even made to include Australia and the Malay Archipelago. But even in the narrowest use of the term, stretching as it does, over 70° of latitude, it embraces a considerable variety of climate and productions, though not so great as in countries farther removed from the leveling influence of the sea.

All writers agree that physically the Polynesians are among the finest looking races on the globe. Their average height is about three inches greater than that of Europeans, and their limbs are shapely and muscular. The men are rather superior to the women, who, though attractive in childhood, incline to grow too stocky at maturity. Their complexion varies from an almost European fairness to a dark brown, with occasionally a yellow or olive tint. The head bears a heavy crop of hair, which is usually black, with a tendency to curl. The growth is small on the face and other parts of the body, and is carefully plucked out. The nose is apt to be long and aquiline, but disfigured by a flatness at the extremity. The mouth is well shapen and displays teeth of pearly whiteness. The shape of the head differs little from that of Europeans, belonging, to speak scientifically, to the mesocephalic order, with a tendency to the dolichocephalic. The wide range of physical variation which has been noticed among these islanders, which at first view suggests mixture of race, is due probably to their relatively high development, which always tends to differentiate men, to the extent of their domain, and the infrequent communication between its parts. Only on the border of Melanesia are we to think of intermixture of races.

The custom of tattooing the body formerly existed in all parts of Polynesia, but is now generally abandoned, except among the ruder islanders. The process was substantially as follows: The artist first drew the desired pattern upon the body of his subject; then taking a fine-toothed comb, made of shell or bone, he

dipped it into a liquid composed of the pulverized coal of the candle-nut and oil, and placing it on the spot caused it to puncture the skin by a blow with a mallet. Soon a bluish color appeared under the skin, which did not fade for many years. The first marks were made about the time of puberty, but so painful and even dangerous, was the process that it was not finished at once, but the pattern was elaborated year by year up to advanced age. The designs were mostly arrangements of curved lines, showing great artistic skill and appearing to the eye like a drapery of fine lace work. Often figures of men, birds, dogs, fishes, or other objects were pictured. The extent of the person covered by tattoo varied on different groups, but the thighs were invariably marked. High chiefs were exempt from the custom, as were the lowest class of freemen, slaves, and to a great extent women. Various theories have been proposed to account for the practice, but the only satisfactory one finds its ground in religion. The figures of living objects so common are the totems of the individual or tribe in which guardian spirits are believed to reside. The operator is always a priest, and the patient is *tabu* 'holy' during the process. The primitive idea seems to have been that by drawing the visible emblem of a deity upon the person his favor was thereby secured. Later, this conception faded out, and the custom came to be simply a mode of ornamentation or mark of social distinction. The chiefs were not tatooed because, themselves partaking of the divine nature, they did not require it, and the rest were exempt because they did not deserve it, for a reason which will appear hereafter.

Though the climate of most of the islands is such as to render clothing needless for comfort, none of the people, except children, often go entirely naked. The men wear the usual girdle about the loins, and when necessary, especially on festival occasions, they wrap the person in many folds of native cloth, the amount of material used being in proportion to the wealth and dignity of the wearer. The women wear besides the girdle, a sort of petticoat, reaching from the waist below the knees. Neatly-woven mats also serve for garments.

The manufacture of the native, or tapa cloth, is an interesting process. The bark of the paper-mulberry, or of several other trees is soaked in water for forty-eight hours, when the inner layer is easily separated from the coarse outer bark. It is then placed upon a table and beaten with a mallet until it has any desired thickness. If considerable body is sought, several layers are beaten until they firmly unite. Since each strip is but a few inches in width, several are laid side by side with overlapping edges; these are glued and then beaten into one piece. The cloth is rendered water proof by smearing it with a sort of gum. The final process is to construct upon it colored designs, which are often delicately and tastefully drawn. The width and

length may be any measure desired, and rolls often contain hundreds of yards. The most expensive garments known to Polynesia are the feather head dresses and mantles. They are constructed of fine mat work, in the meshes of which are interwoven the feathers of various birds. The most famous of these mantles are those of the Hawaiian kings. A little honey-bird, somewhat rarely occurring, has under its wings, one or two golden-yellow feathers about an inch in length. These are plucked out, and wrought into the garment with infinite patience and skill. Many years are required to complete a single garment, and its value is priceless.

The Polynesians are generally cleanly in their persons where the heat of the climate and nearness of the sea make daily bathing a convenience and comfort. In New Zealand, on the contrary, the colder climate disinclines to frequent washing, and the uncivilized native is filthy and covered with vermin. The principal food of the people is naturally fish; but bread-fruit, yams, bananas, cocoanuts, and the fruit of the pandanus, together with the flesh of such animals as abound on the islands, form a part of their diet. Even lizards, rats, and a kind a of larvae are not despised by the poorer classes. Since the art of pottery or working metals was unknown before the arrival of Europeans, all cooking was done with hot stones in a shallow pit in the ground; and all accounts agree that food prepared in this way had a delicacy of flavor quite unknown to modern culinary art. At one time or another cannibalism seems to have been practiced all over Polynesia, but not so habitually or persistently as among the more savage tribes of Melanesia. On some islands the custom had been voluntarily abandoned before European discovery, and elsewhere real or assumed abhorrence of it was commonly expressed. Only the bodies of enemies were eaten, and women and children were generally excluded from the feast. Whatever may have been the origin of the practice, one motive for its continuance seems to have been the supposed transference of the qualities of the slain to the eater, just as some tribes in India eat the tiger for the same purpose; hence the flesh of the bravest warriors was eagerly sought, and the part in which the courage was supposed to reside was especially prized.

The houses of central Polynesia are built within inclosed yards, and consist of a leaf-thatched roof lying upon rafters, of which one end is fastened to tall central posts and the other rests upon lower side posts. There are no walls, to allow a free circulation of air, as frames of plaited leaves serve the purpose. The structure usually rests upon a rude stone platform raised a few feet above the ground. The furniture for the house is simple, consisting of mats for the floor and for beds, rolls of native cloth, tools and weapons, and wooden vessels of

various descriptions, some of which are carved in pretty patterns. The inmates of each house, exclusive of slaves, sleep together on the floor, or in some cases the unmarried men occupy a public building by themselves. The neat and picturesque appearance of Polynesian villages embowered in tropical vegetation has been often remarked by travelers.

The cooler climate of New Zealand requires a more solid and weather-tight construction, and the houses were generally built with stone or wooden walls. Owing to incessant wars, the site for a village was selected with a view to security, and its natural strength was increased by stockades.

The Polynesians are cultivators of the soil, where the character of the islands permits, and raise, besides the usual tropical fruits, plentiful crops of sweet potatoes, yams, etc. In early times only rude wooden tools were used, commonly pointed stakes hardened in the fire. The drudgery was left to the slaves, but the higher orders and even the chiefs did not disdain to work in the fields. It is an important evidence of the comparatively advanced civilization of Polynesia that women were exempt from field labors.

Of the mechanic arts known to this people the most important was the construction of canoes. Some of these were more than one hundred feet in length, and would carry two or three hundred men. Sometimes they were built double, the two being united by a platform. They were propelled by oars or sails. The latter were three-cornered mats, suspended between two masts, one in each ship. The smaller craft usually had an outrigger on one or both sides to prevent upsetting. When we consider that the only tools used were made of stone or shell, we can see that it must have been the work of years to construct one of the larger canoes. One must not think of the parts as fastened with bolts or nails. The keels were trunks of trees hollowed with the stone adze or fire; to these were attached planks trimmed to fit closely, and bound with cords of cocoanut fibre. They were made water-tight with a filling of gum mixed with the same fibre finely divided. These seemingly frail crafts were yet so seaworthy that they outrode severe storms, and endured voyages of hundreds of miles with entire safety. We have already said that women were as a rule well treated in Polynesia. Their principal occupations were weaving mats, manufacturing the native cloth, caring for the children and preparing the food; while the men built the houses and canoes, raised the crops, caught fish, or engaged in war. Women sometimes accompanied their husbands to battle, encouraging and even joining them in the fight. They were admitted to the deliberative assemblies, and their advice was respectfully received. On some of the islands, wives ate with their husbands;

but elsewhere the sexes took their meals apart, and certain kinds of food were tabooed to women.

Marriage was contracted at about 18 or 20 years of age, though the parties were sometimes betrothed by their parents in infancy. In some cases taking the bride home was the only form of marriage; in others presents were offered to her and her father, and if these were accepted, the affair was concluded with a feast more or less elaborate according to the rank or wealth of the families. The custom of real or pretended kidnapping of the bride, which has prevailed so widely among rude peoples, was also known in Polynesia. Polygamy was generally practiced by those who could afford the luxury of more than one wife. The one married first, or who bore the first son, was called the principal wife, and the others were required to show her respect and obedience. Polyandry was not unknown but rarely practiced. Infidelity was not common on the part of wives, and in their case was punishable with beating or death. Fault on the husband's part was usually condoned. Separation could occur by mutual consent, but did not often take place when the marriage was fruitful. Widows and widowers in New Zealand were *tabu* until the burial of the dead. There, and in Tahiti, widows could remarry, but on Samoa they were accustomed to cut their hair and live in retirement. On Tonga it was once the custom to strangle the principle wife on the death of the highest chief, and there is a tradition that the earlier practice was to strangle all wives who survived their husbands. Incestuous marriages were considered unlawful, except in royal families in order to secure a proper succession to the throne.

After the birth of a child the mother and infant lived in a little hut by themselves, and were *tabu* for six weeks or two months. Infantcide was once very common, and it is said that on Tahiti two-thirds of all the children, especially girls, were destroyed at birth. This most often occurred when the parents were of unequal rank, for if the children were killed the father was elevated to the rank of his wife, but if they were allowed to live the parent higher in rank sank to the level of the other. Everywhere in Polynesia two principal orders were recognized in society, the nobility and the common people; below these were the slaves. The lower orders were esteemed of little account as they had no souls that survived death; hence all their possessions were to be used for the good of the higher class, who represented the gods on earth. The words for chief and priest were originally the same. On Samoa each noble family selected a representative head; the family chiefs selected a village chief; the village chiefs chose a district chief, who presided over one of the ten departments into which the islands were divided. Among the district chiefs some one held the highest dignity.

Each chief was regarded as the father and protector of his people, and was treated with the utmost respect. The first draught from the Kava-bowl, and the choicest delicacy at the feast were his. Courtly language, varying according to the dignity of each, was used in addressing them. They were called by high-sounding names, which were thenceforth *tabu* until their death. The chiefs of each village formed a state council, by whom the interests of the community were discussed, and measures were decided on.

A similar political constitution existed in the Tonga group. At the head stood the Egi, the highest nobility, among whom were subordinate grades of rank. Next stood the Matabules; third, the Muas; and last, the Tuas or plebians. A certain number of Matabules attached themselves to each chief as attendants and advisers. The eldest son of a Matabule succeeded to the rank of his father, but the other children became Muas. In the same way, all but the eldest son of a Mua became Tuas. Rank was inherited through the mother. In case both parents held equal rank, the husband took precedence of the wife; the eldest son was preferred before the eldest daughter. If there are no children, the brothers and sisters of the husband inherit the rank in like order. In case the wife enjoys higher rank, the right falls to her kindred. All property goes down in the female line. Ordinarily rank is acquired by birth, but instances have occurred where individuals on account of special services to the Egi were raised to the rank of Matabules, and the dignity was inherited by their children.

The Matabules and Muas directed all the public feasts, being careful that everything was conducted with due regard to the relative dignity of each participant. They also assisted in the training of the younger Egi. The Tuas or common people were held in no higher consideration than are Samoa, and to them fell the humblest services in the community, except what was performed by the slaves. These last were captives in war or criminals. Though they were liable to be put to death and even eaten at the caprice of their masters, they do not seem to have been treated with special cruelty. No traffic in slaves appears to have existed.

The civil distinctions which we have outlined, and which are repeated with greater or less exactness throughout Polynesia, evidently had their foundation in the family. The terms father, son and grandson are applied respectively to the Egi, the Matabules and the Muas. It remains to speak of a somewhat different, and in some respects superior, order which existed on Tonga. It was the religious order, at whose head stood the Tui-tonga, "Lord of Tonga," who once, as his name implies, was a supreme temporal ruler, but later was clothed with spiritual functions only. He was believed to be descended from the

Gods, and, as a partaker of the divine nature, was never circumcised or tatooed. His person was sacred, and would not be approached within a certain distance by his attendants. A special place was assigned him at feasts, and the king sat in his presence as a sign of inferiority. His marriage and funeral were attended with unusual ceremonies, and his place was filled by his son.

The support of the state on Tonga took the form of gifts from the inferior to the higher chiefs, and the people to the class next above them. This tribute consisted of mats, cloth, fruits, material for canoes, or whatever was they desired. They were generally brought twice a year; and since the lower class in society had no rights of property, no objection could be made to any demands the chiefs might set up to the products of their toil.

The political constitution of Tonga seems to preserve best the arrangement of society which once prevailed all over Polynesia. The same is true in a less degree of Samoa. On Tahiti, Rarotonga, and Hawaii, as in Tonga, the kingly power has raised itself to special prominence; while in New Zealand, the Marquesas and Paumotu, a condition more like that on Samoa prevails. As we have more than once intimated, the political system was framed on the theory that there were two distinct orders of mankind — the one derived from the gods and deserving divine honor, the others sprung from the earth, and having no expectation beyond this life. Any commingling of the two orders was a corruption of the purity of the higher one, and the fruit of it ought to be destroyed; hence infanticide in the case of mixed marriages was a duty and merit.

Before the introduction of Christianity the islanders were in a chronic state of warfare. Fighting seemed to be a pastime, and the slightest pretext was sufficient to fan the embers of strife into a flame. In Tahiti, when occasion for war arose, a herald carrying the royal banner was sent around to summon the warriors to an assembly. No one dared to remain at home and encounter the charge of cowardice. If after discussion the majority decided for war, and the gods sent favorable omens, preparations were made for the conflict. Profuse offerings were brought to the friendly gods, and prayers were put up for their aid; an attempt was even made to bribe the gods of the enemy to desert their votaries and come to the other side. The priests with their idols accompanied the war party, and used the offices of religion to inspire the warriors to heroic deeds. There were certain other persons also whose duty it was to urge on the fray by frantic shouts, or the recital of stories of prodigious exploits. In New Zealand, war was in some sense a religious act, and the warriors were *tabu* until the close of the battle. In this case it was unlawful for women to be present.

Sometimes stout mats were worn as a defensive arm but usually the warriors went into battle with naked bodies, excepting daubs of paint and huge feather head-dresses. The weapons were mostly clubs and spears. The former were of stone in New Zealand, but of wood elsewhere; the latter were for thrusting and throwing, but throwing sticks were not employed as in Australia. Bows and arrows were not unknown, though less commonly used than among other peoples. J. AVERY.

BRUNSWICK, ME.

CENTRAL AMERICA AT THE TIME OF THE CONQUEST.

The collosal and diffusive architecture of ancient and extinct empires with its amazing proportions and massive elements, the labyrynthine detail of minute ornament or the extravagant extent of its court yards, walls and chambers, compared with the supposedly rude and imperfect instruments which primal civilizations possessed, has for centuries astonished the world. The melancholy and sublime ruins of palace and temple, with their endless circumlocution of corridors and approaches, the debris of highways and acqueducts, the crumbling piers of bridge, and tower and tomb, enthrall the imagination with their wonderful suggestions of governments now vanished, arts now obsolete, of peculiar and cultivated races. For such architectural wonders we have been accustomed to think of Persepolis, with its great Hall of Audience,of Parthian Ctesiphon,of Thebes, the mighty ruins of Karnac and Luxor, of the rock cut tombs of Egyptian kings, of Babylon, with its levathian walls, its hanging gardens and the sinister strength of its palace, of Nineveh; and more lately of the marvelous Naghkon Watt, within the forests of Cambodia. But their mournful reflex has long been known on the Central American plains and in the fetid depths of Central American forests, where exist the towers and edifices of a forgotten people, whose strange works rival the perishing grandeur of those eastern capitals. Here speechless monolyths and deserted temples, works of an unknown and unknowable people, are encountered, overrun and dismembered by the rank vegetation which impenetrably hides them. Their history is unknown, their ancient occupants and builders fled, themselves slowly disappearing in those storm-swept latitudes, relics of a civilization beyond the dawn of history. Archæology nowhere presents a stranger and more suggestive chapter. Speculation has run wild in fanciful solutions of their origin and affinities, and half-discerned resemblances have connected them

with all the ancient kingdoms of the world. We know something of their social usages and political arrangement, something of their traditional past, where rise and sink like the phantoms of a camera, successive monarchies, something of their subversion and disappearance, when the convulsions that overturned the Mexican empire terminated in their own ruin. They were both expressions of a simultaneous impulse, having the same tendency in religion, government and art. Whence that movement originated we are unable to say. We have now only to examine briefly as we can the extraordinary product it has left us, the flower of an eccentric and indigenous civilization, nipped before the root that bore it had been seen or followed. It was a pagan, an exotic cultus, composed of new, unmentioned elements, ephemeral and fantastic, already in a sort of decadence when we first meet it, and then swept away in the rude contact with the appliances of enlightened warfare and the fanatic lust of religious bigotry.

Central America and Mexico from an archæological point of view, are most naturally considered together; their similarity of institutions, art, worship, and their historical connections communicate a certain logical value to such a treatment. Yet apart from the mechanical advantages of considering them separately, Bancroft indicates the essential propriety, in the divergence of their methods and archæology. "In their traditional history, their material relics, and above all, in their methods of recording events by hieroglyphics as well as in their several lesser characteristics, these two stocks show so many and so clear points of difference, standing prominently out from their many resemblances as to indicate either a separate culture from the beginning, or what is more probable and for us practically the same thing a progress in different paths for a long time prior to the coming of Europeans. In Mexico, although itz civilization was compounded of many separate national organizations, the term *Nahuan* broadly comprehends them all, and in Central America the term *Maya* unites under a common designation a variety of tribes, whose parallel civilizations were from time to time, by warfare, alliance or conquest, intermingled and confused. Their geographical environment was identical. The country which is included between the eastern coast line from Tamaulipas, a province north of Vera Cruz, in Mexico, to Honduras, on the Atlantic and the western coast line from Colima, an unimportant town in Mexico under the shadows of the volcano Colima, to Nicaragua on the Pacific, embraced the theatres of the diversified commotions and artistic impulses which produced Mexico, Mitla, Cholula, Palenque, Copan, Kabah, Uxmal and the governments which occupied them. Through this territory stretches the great Cordilleras of Central America, continuing that vast

axis of upheaval which under the name of the Rocky Mountains furrows the wide lands of the western continent. Upon their flanks, caught between its auxiliary ranges, intercepted and protected by subordinate chains, sloping from them in expanded plains, or falling away in terraced succession, lie great table lands. Many of these raised areas separate the torrid and insalubrious climates of the coast from the high altitudes surrounding the loftiest eminences, and thus construct a scale of climatic change whose transitions are so gradual at times, as to escape detection, or again as rapid as the boundary between them is abrupt and precipitous. The *tierra templada*, or temperate country is situated at elevations of from 3,000 to 8,000 feet, and has an annual mean temperature of from 62° to 70° Fah This propitious region yields its fertile soil to all agricultural purposes, and in the zone where the sunny glades of evergreen oak are perpetually verdant, spots are found where the cereals of Europe flourish by the side of the native maize and maguey. Above these mediate plains rise the *tierras frias*, or cold lands, where an average temperature of 60° prevails, and the elevation is 8,000 feet and upwards. Here a drier air, sharper winds, less constant rain falls and less sheltered fields form a more monotonous and comparatively inclement region. Subject, according to local circumstances, to great diversity of meteorological influences, it embraces tracts where, as on the waterless plateau of Anahuac a meager vegetation scarcely hides a lean and sandy soil, and other parts where perrennial streams animate the landscape with prolific harvests. Coniferous trees make up the predominant flora, the oaks of the tierra templada occurring less frequently, and only where the climate approaches that of lower levels. Lastly, is the *tierra caliente*, or hot land. rising from the very sea-coast to elevations of 1,500 feet and 3,000 feet, this country is but a narrow strip along the Pacific, but covers extensive territories on the Atlantic. It is distinguished by a tropical temperature aggravated by unhealthy exhalations from wide and half exposed marshes or heightened to an unendurable excess as at Vera Cruz, where broad tracts of scorching sands forbid the growth of a tree, or blade, to mitigate the blighting heat. Again in this region occurs the wildest profusion of vegetable glories, wherever rivers offer unfailing supplies of water, or the wet season saturates the soil in periodic tempests. Cocoa, indigo, sugar cane, palms, bananas, cedar, bamboo, mahogany, zapote, brazil, and precious die woods, hide the luxuriant ground with deep forests, while every variety of parasitic vine interlace the boughs with labyrinths of foliage. The average temperature is from 62° to 70° Fah.

The physical configuration of these countries can be quickly told. The Sierra Madre, which enters Mexico at its northern boundary, passes down along the western coast of Mexico, con-

stantly approaching a converging range which forms the high lands behind Vera Cruz. As they unite the intermediate areas as if raised through the communicated disturbance which elevated each, attain a high altitude and form the extensive table land of Anahuac. This table land, upon which Mexico is built, cleft in districts by broad *barrancas* or cañons, reaches, in an unbroken plateau to the bay of Campeche, and sinks away in terraces to the Pacific. Across this table land runs an irregular line of tremendous peaks, capped with eternal snows. The Plateau of Oaxaca lies southward, separated by the Cuesta de San Juan, and then the commingled mountain ranges subside to the insignificant elevation of 750 feet at the isthmus of Tehuantepec. The table land is resumed in the district of Soconusco in Chiapas. Here issues a radial arm through Yucatan, and the flanks of a new Sierra, which unfolding in a double range in Honduras, encloses table lands, intervening valleys and intersecting ranges. The Plateau of Nicaragua follows, dipping suddenly on the east to the barbarous and deadly stretches of the Mosquito Coast, and rising on the west to fertile table lands on the treacherous slopes of recent volcanoes. Lower table lands succeed, and the mitigated splendors of the lofty Cordilleras disappear entirely across the narrow isthmus of Panama. Upon this diversified and variously endowed arena rose the native American civilization, the product in its last stages of a complicated and prolonged interaction between many nations, whose history shows the fierceness and frequency of the struggles for predominance between rival families, the successive introduction of new and barbaric blood from beyond its limits, the decadence of empires, renovations of abuse by plebian or aristocratic revolt, a tedious recital of monarchical ambition, hierarchic despotism, national conquest and individual turpitude.

Of the Maya nations, a brief notice of their social and governmental aspects will properly introduce any notice of their archæology and ruins. The term Maya is applied properly to four centres of national life, those in Yucatan, Guatemala, Chiapas, Salvador and Nicaragua, although in some cases there is evidence of admixture and partial identification with the Nahuan stock, as in Nicaragua. The government in Yucatan, Guatemala and the Chiapas was very similar, and the religious and social usages that prevailed only modified in each by extrinsic forms. The government was a theocratic aristocracy wherein the ruler assumed, at least traditionally, the office of a lawgiver and a priest. Society was composed of the group of the nobility in which the royal family was pre-eminent, the group of the priests whose congenital ties with royalty made them the monarch's natural allies, the group of plebeians, and the group of slaves. The king was assisted by a council of lords and

priests, whose exact organization varied in different countries, in some including auxiliary councils, entrusted with financial interests, distribution of assessments, taxes, etc. The king's authority in the provinces was upheld by governors, in all instances of noble blood, who reflected in their pomp, absolute power and judicial attributes the person of the emperor. These positions were even held by lineal inheritance. Great noble families, adding moral prestige to material magnificence, surrounded the throne, and their rivalries and jealousies diversified the nation's life with all the bickerings of factions and the revolt of parties. They supported the king in his royal progress when, in robe and jewels, and quetzal feathers he advanced before the people, reclining in a palanquin and heralded by music, dancing and troops. In the government there is evidence of democratic influences at some time, from the constant mention of councils assisting like a jury in litigated cases, in the decisions of subordinate rulers, the ordinances of the king himself. Though justice seemed to have been aimed at on the statute books, the custom of bringing presents to the judge and of his sharing with the victor the property of the convicted must have seriously interfered with an impartial judgment. Impalements, burnings, clubbings, confinement in cellars, in wooden cages, castigation, extraction of the heart, slavery and penalties made up the penal code. Taxes were paid and their excess in one instance resulted in the overthrow of the reigning family. The plebeian class were the farmers, merchants and trades-people, debarred from holding office, but compelled to support the government with taxes and military service. In one instance they were elevated into a special class to curb the power of the nobles, but their insolent intrigues resulted in the dismemberment of the empire. Slaves were universally held and the servitude was hereditary. They were distinguished by their cropped heads and "by marks of powdered pine charcoal." They were bought and sold, were indeed as respects the law articles of proprietorship.

Votan and Zamna appear to be the mythical prophets, priests and kings, who first formed respectively the powerful and united kingdoms of Guatemala and Chiapas and of Yucatan, and endowed them with that culture, which was the fountain spring of their power, wealth and industry. Civil commotions broke up these great countries and the separated fragments perpetuated the method and form of their government and religion. Yucatan possessed the great city of Mayapan which, after many reigns was destroyed during the ascendency of the Cocomes, when the Tutul Xius assumed the crown, rebuilt it, and erected a formidable rival to it in the famous and beautiful city of Uxmal, whose ruins now arrest the eye and excite the imagination. Mayapan was again sacked,

the Tutul Xiu line was subverted and the kingdom fell asunder into a loose aggregate of petty sovereignties. Thus disintegrated and wasted by a perpetual conflict they succumbed to the united arms of the Spaniards. In Guatemala the powerful and impressive empire of the Quiches with their capital at Utatlan, and the great city of Xelahuh and that of the Cakchiquels with their capital at Patinamit were the predominant powers on the entrance of the Spaniards, though minor monarchies infested their borders and were either independent or tributary. In Nicaraugua a somewhat different phase of social organization is apparently encountered, an incipient condition of the more consolidated and refined governments we have mentioned. The information is scanty in the extreme and may in reality afford a very erroneous view of their polity. Nicaraugua was divided into a number of provinces where the people elected rulers who were known as *huehues*, or old men. There governors appointed their subordinates and enjoyed an absolute control over such servants, though how they were held answerable for encroachments on popular liberty or negligence of duty is not explained. Other communities were ruled by *teites*, or cheiftains who affected the style and arrogance of the Quiché and Chiapan kings. An elective council called monexico restrained their excesses and was empowered to oppose and overrule their wishes. The Pipiles, in Salvador, formed a sort of confederation whose tie was in most instances the approach of common danger, or the overshadowing influence of some powerful leader. They were separately governed by chiefs whose succession was hereditary, and they, somewhat as the Nicarauguans, represented a miscellaneous collection of allied tribal governments settled on the frontiers of a great empire and beginning to affect through the educational influence of contact and commerce the structural complexity of the latter.

The Maya Calendar of feasts and festivals is a full and striking one. The various vocations of men had their appropriate holy days, the gods had ceremonial days for worship, propitiation, and sacrifice, the seasons and new years were celebrated with religious observances and occasions of victory or defeat in war, of pestilence, drought, famine, or invasion, were signalized by such rites as might avert the heavenly wrath. They appear in the main monotonous, in their general character of frivolous ritual, indecent puerility, or revolting barbarism, and seemed to form convenient occasions for universal and unbridled indulgence. Sometimes they are marked by a species of devout and ingenious symbolism, and in their celebration doubtless formed picturesque and extraordinary spectacles. The feasts of especial solemnity were preceded by penance, vigil, fasting, and temperance. This was followed by the various rites peculiar to the special feast, celebrated for the most part by burning of incense,

copal, maize and the ulli sacrifice of victims, their hearts being cut out by the Priests before their hideous idols, whose obscene visages were smeared with this sacrificial blood, and letting of blood from various parts of the body, the whole affair concluding with an universal and prodigious spree. Guzzling to an unlimited extent was rather gloried in, wives supplied plentiful potations to their drunken masters, and he who rolled over helpless on the floor was regarded with envy. In the month of Chen they made and consecrated idols, in Zac the hunters propitiated the Gods for their slaughter of wild animals, in Mac the corn-field Gods were honored, in Muar the cocoa planters sacrificed a dog spotted with the color of cocoa to their tutelar deities. In Pax, a semi-martial feast was celebrated in which eating, drinking, praying, and offering incense were incongruously mingled, the Nacon or General of the Armies alone preserving his head unfuddled. Banquets followed and upon the rich devolved the expensive duty of supplying the people with these entertaining offices of devotion. The first day of Pop was New Year's day, when the houses were thoroughly swept, the utensils of the past year rejected, and by fasting and prayer their minds prepared for the general ceremonies peculiar to that season. Fishermen worshiped in the month Zip. In Xul, Cukulcan, a semi-mythical hero, who perhaps was an early civilizer and prophet, was worshipped with appropriate ceremonies. Apiarists interceded with the gods in the month of Mal. The four gods of produce and harvest were duly honored, the two heaps of stones placed at each cardinal point in the Yucatan towns became then the scenes of solemn festivals. Amongst the Pipiles, victory was celebrated with frightful rites, human victims being offered up, thanksgiving obligations to the gods, for many successive days, while caciques and priests decorated in wild regalia, led on the frenzied glee of these savage festivals.

Turkeys heads of fowls, dogs, food, drink, incense, bread, flowers, the hearts of reptiles and of men were offered to the gods. Perhaps the most interesting ceremony practiced amongst these people was that of baptism, which is thus described by Bancroft, and wherein is detailed the means adopted for expelling the devil, an apparently notorious pest, judging from the frequency with which they resorted to spells for his expulsion. "It is related by all the old Spanish historians that when the Spaniards first visited the kingdom of Yucatan, they found there traces of a baptismal rite; and strangely enough, the name given to this right in the language of the inhabitants was *zihil*, signifying 'to be born again.' It was the duty of all to have their children baptized, for, by this ablution, they believed that they received a purer nature, were protected against evil spirits and future misfortunes. When parents desired to have

a child baptised they notified the priest of their intentions. The latter then published a notice throughout the town of the day upon which the ceremony would take place, being first careful to fix upon a day of good omen. When the appointed day arrived, all assembled with the children who were to be baptised in the house of the giver of the feast, who was usually one of the wealthiest of the parents. In the courtyard fresh leaves were strewn, and there the boys were ranged in a row in charge of their godfathers, while in another row were the girls with their godmothers. The priest now proceeded to purify the house, with the object of casting out the devil. For this purpose four benches were placed, one in each of the four corners of the courtyard, upon which were seated four of the assistants holding a long cord that passed from one to the other, thus enclosing part of the yard. Within this enclosure were the children, and those fathers and officials who had fasted. A bench was placed in the center, upon which the priest was seated with a brazier, some ground corn and incense. The children were directed to approach one by one, and the priest gave to each a little of the ground corn and incense, which as they received it, they cast into the brazier. When this had been done by all, they took the cord and brazier with a vessel of wine, and gave them to a man to carry outside the town, with injunctions not to drink any of the wine and not to look behind him. With such ceremony the devil was expelled. The yard was then swept clean, and some leaves of a tree called *cihom* and of another called *capo* were scattered over it. The priest now clothed himself in long, gaudy-looking robes, consisting, according to Landa, of a jacket of red feathers, with flowers of various colors embroidered thereon; hanging from the ends were other long feathers, and on his head a coronet of plumes. From beneath the jacket long bands of cotton hung down to the ground. In his hand he held some hyssop fastened to a short stick.

The *chacs* then put white cloths upon the children's heads and asked the elder if they had committed any sins; such as confessed that they had were then placed apart. The priest then ordered the people to sit down and be silent; he next blessed the boys, and offering up some prayers, purified them with the hyssop, with much solemnity. The principal officer who had been elected by the fathers, now took a bone and having dipped it in a certain water moistened their foreheads, their features and their fingers and toes. After they had been thus sprinkled with water, the priest arose and removed the cloths from the heads of the children, and then cut off with a stone knife a certain bead that was attached to the head from childhood; they were then given by one of the assistants some flowers to smell, and a pipe through which they smoke, after which they were

each presented with a little food, and a vessel full of wine was brought as an offering to the gods, who were entreated to receive it as a thanksgiving from the boys; it was then handed to one of the officials, who had to drink it at one draught."

The Pipiles had one great feast for victories and others for hunting and fishing, whilst among the Nicaraguans, eighteen ecclesiastical seasons diversified the year with horrid sacrifices.

The education of the Maya youth was varied according to the position and prospects of the pupil. The children of the plebeians were taught the vocations of their parents, the scions of noble families, the mysteries of their religion, and all obedience to their parents and reverence for the gods. In Yucatan, seminaries of young men were controlled by the priests, who explained with discreet diligence the various arts of their profession.

L. P. GRATACAP.

[TO BE CONTINUED.]

LIFE AMONG THE MANDANS EIGHTY YEARS AGO.

[Continued from page 253.]

FORMER RELATIONS OF PAWNEES AND MANDANS.

Not many years ago the Pawnees and Mandans were allied to each other, and lived together in the same villages, which were situated on the banks of the river Missouri, about thirty leagues below. A misunderstanding happening to occur amongst them they separated, the Pawnees retired down the river and built their village where it stands at present (A. D. 1806), and the Mandans proceeded with an intention of settling themselves somewhere about the confluence of the Little Missouri river, or on the upper part of Reviere La Souris (Moose river). But on their arrival at this place the Big Bellies barred the road, and put a stop to their progress to the westward, telling them that they would not permit them, or any one, to build higher up the river, and desiring the Mandans to build where they are at present. The latter, it seems were not much inclined to comply, but dreading the displeasure of the others who were more numerous, comprised, then, of a village of nine hundred huts, necessity obliged them to accept the terms. Since that period the Pawnees and Mandans have frequently been at war, and as often made peace again. They are a stationary people as the Mandans, and cultivate the ground in the same manner;

they are represented as a treacherous, deceitful people, always taking advantage of their neighbors, and favoring the Sioux when they come to war this way, and frequently intermix with them to annoy the Mandans and Big Bellies.

SIGN LANGUAGE.

This language is entirely different from the natives of this place, and it is only by signs that they usually communicate with each other, excepting a few among them who understand each other's language. It serves as interpreter upon any affair of importance. It is surprising how dexterous all these natives of the plains are, in the art of communicating their ideas by signs. They will hold conference, for several hours together, upon different subjects, and during the whole time not a single word will be pronounced upon either side, and still they appear to comprehend each other perfectly well. This mode of communication appears to be quite natural to them, other difficult events are performed with the greatest ease and readiness. They never seem to be at loss, or in want of a sign to express their meaning.

COURTESY TO STRANGERS.

Soon after our arrival, there was a great uproar occasioned by the unexpected visit of six Pawnees, from their own village, sixty leagues below this, on the banks of the same (Missouri) river. They were sent upon an embassy to treat for peace. It appears that last spring, some of these people had accompanied a war party of Sioux who came here and killed five Mandans. The latter nation, in company with the Big Bellies (Gros Ventres,) soon after returned the visit, and not finding the Sioux, on their return killed two Pawnees, but this did not satisfy them. They had informed the Pawnees that they might expect a more formal visit the ensuing fall; that both the Mandans and Big Bellies were determined to exterminate every Pawnee they could find, and lay their villages even with the ground.

To avoid this storm, the latter thought prudent to sue for peace. A messenger was instantly dispatched to the upper villages to give information of their arrival. In the meantime the strangers were very hospitably entertained, conducted into a hut, and presented with corn and beans, dried meats, etc. All were now silent for some time, awaiting the determination of the Big Bellies.

ARRIVAL OF GROS VENTRES.

The Big Bellies, in a short time, arrived on horse-back; about thirty men came down full speed; they brought down an inter-

preter with them. They did not appear well pleased, and looked on the Pawnees with an eye of disdain. After some conversation they desired the Pawnees to return immediately to their own villages, and to inform their great war chief, Red Tail, that if he sincerely wished for peace, he must come up and then they would settle matters, as they were determined to have nothing to do with young men. They allowed two moons to consider upon the business, and perform the journey. If, at the end of that time, the Chief did not make his appearance, they would immediately gather up their corn, and in a body, go and find him out, in his own village, and convince him what Big Bellies (or as they call themselves Willow Indians), and Mandans could do when exasperated by the treacherous conduct of the Pawnees.

The six embassies promised to depart early next morning to inform their Chief, who they answer no doubt, would very soon wait upon them. Thus ended an affair, which at the commencement we supposed would conclude with the death of the strangers, by the great bustle and noise their arrival occasioned.

But I was afterwards informed that of such proceedings there was not the least danger; that the natives of this place make it a particular point of honor to protect every stranger who throws himself upon them and begs their clemency. Even their natural and most inveterate enimies, the Sioux, have been known to come into their villages unexpectedly, and were always received with hospitality, and well entertained during thei stay which by the way, they never permit to be more than one night when they are dismissed, and allowed to return to their own homes unmolested.

A HUNTING PARTY.

Towards the evening there was a whooping and howling among the young men who were standing upon their huts. This, it seems, was to announce the appearance of a hunting party of the Mandans, who were just at that moment appearing upon the tops of the high bank to the south, and descending by a well-beaten road towards the village. The party consisted of about one hundred men on horseback, and each loaded with half a buffalo; some of them had even more, according to the strength of their horses, and the master will always ride, be his beast ever so loaded. They had been away since yesterday and found buffalo in great abundance near at hand. These people never go out hunting unless in large parties. The continual danger from their enemies obliges them to be very cautious; another reason is, that when the buffalo comes near at hand, they are anxious to prevent them from being driven away. For this purpose, it is customary for them all, in a body, to surround one herd only, which sometimes consists of several hundreds.

Not one do they allow to escape, large and small, fat and lean, all must fall to prevent their alarming other herds.

The manner of hunting the buffalo answers another good purpose, which is that the bad and dull horses have an equal share with the best racers.

DIVISION OF THE BUFFALO HUNT.

They never make use of fire arms in hunting the buffalo. The bow and arrow is the only weapon. When a hunting excursion is in agitation among the Mandans, they inform their neighbors on the north shore, and the Saulteurs (Fall Indians.) The Big Bellies have their own parties and seldom interfere with the others. They never go in the same direction, the one goes to the northeast, and the others to the southwest. The Knife River, indeed, seems to be the boundary line. The day is fixed for their departure, when early in the morning as many as are inclined to be of the party assemble upon the rising grounds in the rear of the village, about one and a half miles to the south. When all are ready they proceed in one body to find out the buffalo, and seldom or never return light. I observed that on their arrival, an extraordinary custom prevailed among them — the horses are instantly unloaded and the meat taken into the huts, where it is spread out upon the ground and exposed for some time before the master or mistress of the hut makes use of it. Soon after it is arrived, the women whose husbands or sons have been hunting, enter the huts of those who have meat, when the mistress instantly gives them a share, and they walk away with it, so that it often happens that there remains not a mouthful for her own family. When this is the case, she, in her turn, goes to the huts of some of her friends who have been hunting and comes away with a load. I observed that in several huts of those who had not been hunting, there was more meat than in those who had been out. It is also customary for the old men and the old women, who have no sons, nor particular friends, to march out on the first news of the hunters' approach, to the distance of a mile or more, where they sit by the road, and almost every hunter in passing drops them a piece of meat. By these means every individual has a share of what has been killed.

VILLAGES LIKE MOLE HILLS.

These villages at a distance have the appearance of a cluster of mole hills, or musk rat cabins. They are nearly of a circular form. The huts are placed in a very irregular manner, and some so very close to each other, as scarcely to admit of a foot-passenger; others again, at a distance of twenty to thirty feet from each other.

OPEN SPACE IN VILLAGE.

But I observe, always, that nearly about the centre of each village is a large open space of about four acres in circumference, round which the huts are built very regularly, and at equal distances from each other, the doors fronting the open space. This circle might consist of thirty huts, and I make no manner of doubt were the first that were erected on the spot.

VILLAGE EXPANSION.

Others of their friends joined them afterwards, for various causes and built in the rear and erected their huts as they found it convenient, and as this continues to be the case, there are huts continually demolishing in one village, and others building in another. This often proceeds from misunderstandings they have had with either of the chiefs of the village, or their own neighbors, when finding their situation unpleasant and probably subject to frequent quarrels, they shift their quarters, but always take up their own residence among their own tribe.

The Mandans and Saulteurs are a stationary people, and never abandon their villages further than to go out hunting or on a war party. They are much more given to agriculture than the Big Bellies, and raise an immense quantity of corn, beans, squashes, tobacco, and some flowers.

A MANDAN HUT.

A Mandan hut is large and spacious, of a circular form. I measured the one I lodged in, and found it ninety feet from the door to the opposite side, forming a circumference on the inside of many paces. The whole space is dug out about one and a half feet below the surface of the earth. In the center is the fire place, which is a square space of about five feet, dug out two feet below the surface. The lower part of the hut is constructed by erecting strong posts about six feet out of the ground, at equal distances, upon these are laid logs of the same size, and reach from post to post, and form the circle. On the outer side are erected pieces of split wood of seven feet in length, in a slanting manner, the one end resting on the ground, the other leaning against the crown log or beam. Upon this beam again, are placed rafters about the size of a man's leg, and from twelve to fifteen feet long, in a slanting position, sufficient to drain off the rain; they are laid so close as to touch. The upper end is supported upon very stout pieces of square timber, which last are also supported by four very thick posts, about five feet circumference, and fifteen feet out of the ground, and fifteen feet asunder, forming nearly a square. Over these pieces of square timber, others again of equal size are laid crossing them at right

angles, leaving open only a square space of about four feet on each side. This serves for chimney and windows, as they have no other opening to admit of light; and when it rains, even this is covered over with a canoe to prevent the rain from impairing their earthen pots. The whole of the roof is then well thatched with willows, to the thickness of six inches or more. Over the whole is laid about one foot of earth, and round the base to the height of three or four feet, and the thickness of three feet, which answers for security in case of an attack by the enemy, and keeps out the cold. The door is five feet broad and six high, provided with a covered way or porch on the outside, of the same height as the door, about seven feet broad and ten feet in length.

The doors are made of raw buffalo hide stretched upon a frame and suspended by cords from the beam, which forms the circle. Every night the door is barricaded with a long piece of timber supported by two stout posts down in the ground, inside of the hut, one on each side of the door. As you enter the hut after passing through the porch and door, the first thing that strikes the view is a kind of triangular apartment on the left hand side of the door, and fronting the fire. This is for the purpose of fire-wood in the winter. This partition is constructed of square planks, about twelve feet high, and caulked to keep off the air from the door. Between the partition and the fire, there is commonly a distance of about five feet, which the master of the hut occupies during the day time, seated on a mat, constructed of small willows. * * * These mats are about ten feet long and four broad. The two ends for about two and a half feet are raised from the ground in a slanting position and each supported by a kind of sofa; over the mat is spread buffalo skins.

Some of these couches are raised about a foot above the ground. Seated upon this a Mandan sits all day long and receives his friends, smokes and chats the time away, with the greatest dignity. He sometimes passes the night there also, when not inclined to lay with his wives.

INSIDE ARRANGEMENT OF HUTS.

On the left side of the host begins their range of beds. The master and his favorite wife always occupy the first, and his other wives each a separate one in succession, next to those of the young people. All are constructed in the same manner, and joining to each other lengthways.

MEDICINE STAGE,

At the bottom of the hut fronting the Masters' seat, stands his medicine stage, and indeed it may be called his whole riches

and treasures, as it contains every thing he values most, viz: two bulls' heads, which seem to be their great Manitou and protection. They are well daubed over with earth, and particular care is taken of them. There is laid on, or rather hung up, his arms, shield, ammunition, scalps of his enemies, and every thing he most values.

MORTAR AND PESTLE.

Next to this stage, stand the mortar and pestle, fixed firm in the ground, and the remainder of the hut from that to the door is vacant during the daytime, but occupied during the night by the horses. Then there still remains a large space in the center, around the fire, for the use of the family, which is generally swept clean once a day.

CORN STAGE.

Fronting the entrance of each porch stands a stage raised about eight feet from the ground, twenty feet in length, and ten feet in breadth, for the purpose of hanging up their corn to dry, in the fall; these stages have a tolerable good flooring, which in the fall is covered with beans to dry, and posts are erected upon them, on the tops of which are laid poles or rafters, to which the corn and sliced squashes are suspended in tresses to dry. When their harvest is over, they must have a pretty effect, but at this season of the year they are lumbered up with different kinds of drift-wood, of which they make their fires, and it gives a very ugly appearance to the villages.

DRIFT WOOD.

This wood they collect, in the spring, when the ice breaks up, and when great quantities of this wood floats down, the natives being expert swimmers, and so very active, that there is scarcely a large tree escapes them, until they have a sufficient stock for the year. I observed lying opposite to each village, an immense pile of this wood, and some trees of an amazing size. Commonly, when they collect the drift wood there come down numbers of drowned buffalo, that have perished in attempting to cross above, at a season when the ice was bad. These animals the natives are very careful to haul on shore, as they prefer the flesh in that state.

LIGHT HAIRED CHILDREN.

An extraordinory sight that struck me among these people, was to see several children, of about ten years of age, whose hair was perfectly gray, and bore a strong resemblance to aged persons. Those I saw were all girls. These people in general have not that strong coarse hair, so peculiar to the natives of North America; it is of a much finer nature, rather inclining to

a dark brown, some few indeed I observed whose hair was almost fair. A Big Belly, in particular, I saw with yellow hair. This circumstance, I believe, could scarcely proceed from any connection with the whites, as it is now more than thirty years since they first saw us, and this man was at least forty years old. Their eyes are jet black, some few are of a dark grey.

LONG HAIR.

The men wear their hair long, twisted into small quaittes hanging down to the rump. Some have it of enormous length, trailing upon the ground. They seldom tie it, but allow their numerous small quaittes to flow in a more graceful manner upon their backs; they always daub it with white and red earth. The women wear their hair short, allowing it to grow no longer than to be of sufficient length to cover the ears and neck. They never tie it, nor make use of any ornament for the head further than sometimes daubing it with red earth.

LASCIVIOUSNESS.

They seem to be a very lascivious people. The men make not the least scruple in offering their wives to lay with strangers, without any solicitation, and are even offended, if their offers are not accepted, unless you can convince them, by some good reason, for refusing to comply, and that it is not out of contempt. They always expect payment for their complaisance, but a mere trifle will satisfy, even a single coat-button. Notwithstanding this courteous behavior to strangers, they are not entirely free from jealousies among themselves, which sometimes cause quarrels and bloodshed. The woman generally falls a sacrifice in an affair of this nature.

MODE OF ROASTING MEAT.

They have a very peculiar way of roasting meat; a plecotte, in particular, is suspended from the roof of the hut exactly over the fire, the cord being passed through and fastened to the centre of the piece keeps it in a flat position directly over the flames. A person is seated near it, and with a small stick keeps it continually in motion by pushing it to and fro. When one side is done, it is turned over, and fit for use. This method is much more expeditious than the common way of roasting before the fire, and preferable, as it retains the natural juice and flavor.

EDWARD D. NEILL.

NOTES ON THE LENNI LENÁPE, OR DELAWARE INDIANS, OF PENNSYLVANIA.

At the time of the settlement of Pennsylvania, the Indians who occupied the country called themselves *Lenno Lenapi*, according to Mr. Schoolcraft; the term signified "*manly men.*" According to the missionary Heckewelder, they called themselves *Lenni Lenápe*, which meant "*original people.*" Loskiel translates it "*Indian men.*" The Delaware, as also the Minsi, word for man, was *lenno.*

Dr. B. S. Barton, in his "New Views of the Origin of the Tribes and Nations of America" (1798), asserts that the nation was divided into three tribes or branches, called respectively the *Unámis* or *Wanámi*, the *Unaláchtigo* or *Wunaláchtigo* and the *Minsi*, *Monsees*, or *Minnisinks.* These all belonged to the Algonquin stock. The Delaware River was called by them *Lenape Whittuck*, *Mariskitton*, etc. The tribe not only occupied the greater portion of Pennsylvania, but the most of New Jersey. The Schuylkill River, which signifies "*hidden creek*," was so named by the Swedes, from the fact that its mouth was concealed from view in passing up the Delaware. The Indians called it *Manauing*, from which we get the word Manayunk.

The so-called Mound-Builders never occupied Pennsylvania. Although tumuli and small mounds occur in many localities, there are none of those enormous earthworks which characterize the valleys of the Mississippi and Ohio, and which imply the former existence of an advanced and sedentary race of men.

Mr. John F. Watson observes, in his "Annals of Philadelphia," in regard to the Lenni Lenápe: "They, as well as the Mengwe (called by us *Iroquois*), agreed in saying they came from westward of the Mississippi, called by them *Mamaesi Sipu*, or river of fish, and that when they came over to the eastern side of that river, they there encountered and finally drove off, all the former inhabitants, called the Alligewi (and of course the *primitives* of all our country!) who, probably, such as survived sought refuge in Mexico."

At about the beginning of the 16th century, the Lenni Lenape tribe occupied principally the valleys of the Delaware, Schuylkill, Susquehanna, Lehigh and Brandywine, or virtually, the country drained by the former. Through the influence of Penn and his followers, they became partially civilized and agricultural. They gradually, however, moved westward, crossed the Mississippi, and stopped at the mouth of the Kansas river. They left the neighborhood of Philadelphia and Bucks county in 1775. In 1850, the remnants of the tribe numbered about 1,500. In 1855 their number increased to about 2,500. At

present the few hundreds that survive, are settled in the Indian Territory.

LANGUAGE.

In the vocabularies of Heckewelder, Zeisberger, Lieut. A. W. Whipple and others, we have recorded a large percentage of the languages of the Algonquin family. There is also in existence a Delaware Indian spelling-book and a grammar, prepared by Zeisberger; the latter having been translated for the American Philosophical Society, of Philadelphia, from the German manu script of the late Rev. David Zeisberger, by Peter Stephen Duponceau, Philadelphia, 1827.

PICTOGRAPHS.

In the Proceedings of the American Philosophical Society of Philadelphia, Vol. X, No. 73, Prof. Thos. C. Porter gives a description, illustrated by a full-page plate, of figures carved on two gneissic rocks in the Susquehanna River, below the dam at Safe Harbor, Lancaster county, Penna. In these etchings occur the serpent symbol and several figures resembling the Egyptian deities Isis and Osiris. In regard to these, Mr. Porter remarks, "The two rocks contain in all upwards of eighty distinct figures, and a number more almost obliterated. They are much scattered, and seem to have been formed without regard to order, so that it is impossible for an unskilled observer to say that they bear any necessary relation to each other. They are probably symbolical, but it is left to those who are versed in American antiquities to decipher their meaning."

CAMPING GROUNDS, WORK-SHOPS, ETC.

On elevated points near good springs or streams of water, many remains of the stone age are found. Arrow-heads, axes and fragments of pottery are still being picked up almost every day. On the western banks of the Delaware river, about twelve miles from Doylestown, an ancient encampment is readily traced. Many arrow-points and other relics are constantly being collected, and the appearance of the locality, where bushels of flakes occur, indicates that the Indians at one time manufactured stone implements there in great numbers.

QUARRIES.

An old Indian steatite quarry may still be seen in the vicinity of Christiana, Lancaster county. An excavation has been made in the ground where a large quantity of soapstone has been removed. In the neighborhood are ploughed up every year numbers of steatite vessels, entire and fragmentary, and coart-loads of pieces of dishes may be gathered in the adjacent

fields. Doubtless here was obtained much of the material (*lapis ollaris* of the ancients) from which the tribe fashioned their utensils, which at one time were so numerous in every lodge.

GRAVES.

There are several undoubted Indian graves on the banks of the Brandyiwne, only one or two of which have ever been opened. In these were found deposits of axes and other stone implements. Several extensive grave-yards exist in the vicinity of the Delaware Water Gap, and those which have been excavated have revealed many aboriginal remains, associated generally, however, with objects of recent European introduction, such as copper kettles, guns, beads, etc. Some of these latter tombs contained rude boxes or coffins, formed of slabs of stone, in which the skeletons had been placed. In some instances shallow trenches surrounded them, and the superfluous earth had been heaped in low mounds over the bodies.

CAVES.

The Carlisle cave, explored several years ago by Prof. S. F. Baird, is perhaps the most important ever yet discovered in the state. Recently, however, Prof. S. S. Haldeman examined a rock-recess in the rear of his grounds, on the banks of the Susquehanna river, at Chickies Station. From this he obtained several hundred arrow points, fragments of earthenware and many finely finished stone implements. The remains extended for several feet below the surface, showing that the place had been occupied for a considerable length of time.

THE THREE AGES.

The copper age in Pennsylvania is represented by a few specimens of copper implements which have been discovered in different localities; but these could scarcely have been produced by the Lenni Lenape tribe. They were doubtless obtained from the ancient miners of Lake Superior, or, at least, were the remains of the industry of the mound-building race, which had found their way into Pennsylvania. In the collection of Mr. W. S. Vaux, of Philadelphia, are two finely finished copper axes or chisels, which, with one exception, are the only examples of local copper implements with which I am acquainted. The barbarous aborigines of Pennsylvania never passed through the Bronze age proper. The Stone age in America was not synchronal with the Stone age in Europe, for while the Lake Dwellers, of Switzerland had advanced to the third epoch in civilization (that is, the Iron age), the savages of some portions of America

were still employing articles of stone, while they possessed no knowledge of the application of metal

From the *neolithic* Stone age, the Delaware Indians leaped into an artificial Iron age (if I may be allowed the expression), that is to say, they used stone for every purpose until the arrival of the Europeans, when their natural tools and implements were superseded by iron utensils furnished them by the whites. Iron tomahawks are frequently ploughed up in Chester county, but they were obviously manafactured by Europeans, for the purposes of barter with the natives.

OTHER REMAINS.

Arrow-heads and spear-points are exceedingly numerou throughout eastern Pennsylvania and New Jersey. The mates rial is usually flint, frequently white quartz, and more rarely jasper. The usual form is the leaf-shaped head. In the collection of Philip Sharpless, an ardent collector of West Chester, Pa., is a delicate barbed arrow-point of *obsidian*, which was picked up in Chester county. That it is not smoky quartz is evident from the fracture, which, in volcanic glass is so smooth and perfect. The form and exquisite finish of the specimen would indicate a western origin, differing materially from the more clumsy productions of the eastern states. It is probable that it was brought from beyond the Rocky Mountains or from Mexico, and possibly the material was obtained from the celebrated Mexican " Hill of Knives," showing the extent of former communication between the aboriginal tribes of North America.

Chungke-stones have also been found in the region occupied by the Delawares. Mortars and pestles are numerous, some of the latter measuring eighteen inches in length. Stationary mortars occur in some localities. On the property of Prof. Haldeman may be seen a large oval bowlder of rock, weighing several tons, in the center of which a hole has been pecked out, in which some of the Indians doubtless, were in the habit of grinding their corn. Axes, pipes, aboriginal and Venetian beads, ceremonial scepters, sculptures of stone and clay, hoes, stone balls, perforated stones, and a variety of other objects are found abundantly. Yet few of these show any great proficiency in the arts, and they will compare unfavorably with the more finished remains of the mounds, or the ruins of the western Territories.

COLLECTIONS.

Besides the extensive collections of the Academy of Natura, Sciences of Philadelphia, the American Philosophical Society and a few other Pennsylvania Associations, there are many valuable private collections in the State, among which are worthy of mention that of Philip and Alfred Sharpless, and that of Chas.

H. Pennypacker, Esq., of West Chester, Pa. In Philadelphia, Mr. Wm. S. Vaux, Mr. Klingbeil, and Dr. Dickison, now deceased, were former owners of extensive cabinets. The collections also of Mr. Isaac S. Kirk, and of the late Mr. W. A. Long, of Chester county, as also that of Mr. L. W. Brodhead, of the Delaware Water Gap, are very complete. There are many others in the State, but the limits of these notes will not permit a review of them. Prof. Thomas G. Gentry is engaged at present in the preparation of a work on the "Stone Age in Pennsylvania," which will doubtless add much to our knowledge of the History of the Lenni Lenape tribe.

EDWIN A. BARBER.

DO-KI-BATT; OR; THE GOD OF THE PUGET SOUND INDIANS.

There are two things, in a religious way, of which the Indians on Puget Sound, or at least some of them, are full. One is the practice of tamahnous, or incantations, and the other is the tradition of the coming long ago of a great supernatural being called Dokibatt, by the Skokomish Indians, Dokwibutt by the Skagits and Niskwallies, according to George Gibbs, and Nukimatt by the Challams, the difference in the latter tribe being accounted for by the fact that their language is much more nasal than that of the surrounding tribes, the same difference being seen in other words, which are common to them and other tribes. The latter tribe say it was a woman and not a man, as some others say.

The origin of this personage seems to be somewhat confused. One of the Clallams, which tribe worshipped the sun, and believed it to be the supreme ruler of the world, say that this being was the sun incarnate, while the Skokomish Indians say that he was the original creator of the sun, moon, man, woman, birds, beasts, and all things. I have never been able to discover that this latter tribe worshipped the sun. He seems to have held the same rank with the Ikanam of the Chinooks, Amoteken of the Flatheads, and Siméhu of the Spokans.

But while their ideas of his first work are somewhat confused, their belief of his second coming are quite clear, and nearly all these tribes agree as to what he did. He changed things very decidedly, hence his name, which means "Changer." At that time the Indians hardly know where he came from, but they think he came from the south or southwest, where the sky

comes down to meet the world, and was last heard of toward the north in British Columbia.

A long time after the Creation, say the Indians, the world became bad and the people bad and foolish. Whereupon Do-ki-batt determined to come here and rectify affairs, to punish the wicked, and to change the foolish into something else.

One man, according to the Skokomish Indians, knowing that he was coming, sat down with his bone knife and began to whet it, saying, "I will kill him when he comes." Soon he came, but was so much like common men that the man did not know him. Dokibatt said. "What are you doing?" "Nothing special," was the reply. Again the same question was asked with the same reply. Then Dokibatt said, "I know what you have said, you want to kill me. Let me take your knife. It was given to him, and he thrust it into the man's ankle behind, which made the man jump, and he continued to jump, was changed into another form, jumping on all fours, and this is the origin of the deer. As he plunged the knife into the ankle up to the handle, he left it there, where it still remains as the fetlocks.

Another man was acting similarly with his knife, when Dokibatt took it and thrust it into him and he became a beaver, the knife becoming his tail.

Another man was pounding against a cedar tree with his head trying to split or break it, so foolish was he. Dokibatt asked him what he was doing, and he told him — whereupon the Changer told him he had better go away. He did so, and as he ran a long bill, strong head and wings came to him and he became the woodpecker.

He found another foolish man out in the rain, not knowing enough to go under shelter, and swinging his arms, in his attempt to keep the rain off. He was changed into the humming bird, and its arms are still swinging.

Another man was performing incantations with his hair tied up in a knot on his head. He was changed into a blue jay — his knot still remaining.

A boy knew he was coming, but was afraid he might be changed, but did not wish to be. So he ran away, carrying with him a water box or Indian pail with some water in it. As he was running, some wings came to him, he began to fly and became a turtle dove. The shaking of the water made a noise, something like that when pŭ-pŭ-pŭ is said very fast, and this became the present noise of the bird as it begins to fly, As he went he began to cry hŭm-o-hŭm-o, a noise which was changed into its present mourning sound. This word, hum-o, is the name of the bird in the Skokomish language.

Other men had painted themselves in various ways, and when they were changed, these colors partially remained, and this was the origin of the colors of the birds now.

At Eneti, near the mouth of the Skokomish river, he found some men fighting and changed them into stones, which now lie there on the beach, a very large one having been an officer in the battle.

As he walked across the land near the mouth of the Skokomish river he slipped, and hence cursed it, whereupon it became the marsh there.

As he walked down Hood's Canal, on the west side, he found two canoes, turned over, their owners being off fishing. These he changed into two long stones now lying there.

In crossing a small stream he again slipped, and hence cursed it, on account of which no fish go up that stream even to the present time. A short distance north of the mouth of the Lillanwop river are two long places in the rock about two feet long, which look someting like large foot-tracks, deeply made in the stone. These the Indians believe to be the footsteps of Dokibatt. They are between high and low tide and were evidently washed out by the water.

On the opposite side of the canal, about three miles below the mouth of the Dewater, is a large stone, of hard conglomerate, about thirteen feet high, and five or six feet in diameter, tolerably regular in its rounded shape. This was a woman previous to the coming of the Changer.

At Squaksin he found one man crying, and he was changed into a stone, the tears on his face, being lines which are said to be still visible on it.

He found some Indians standing in the water trying to catch some fish in a very rude manner. He asked them what they wished; they replied that they wished to catch fish. Then he taught them how to make a fish trap, such as they now make across the rivers. He asked them what kind of fish they wanted, and when a silver salmon came, asked them if that was the kind. On an affirmative answer being given, he said, " do not kill it, but wait until it has deposited its eggs, so that there may be large numbers of them," and they did so. Then a salmon trout came and a similar conversation took place about it.

About five miles below Skokomish on the east side of the canal is a bank of red earth, where the Indians formerly obtained their red paint. These were formerly Klikitat Indians, while the bank on the opposite side of the canal were Skokomish Indians. They engaged in a great game of gambling, which the Klikitats won. Dokibatt changed them into the land, and since then the Skokomish Indians get their paint there for painting their faces red when they gamble, so that they may also win.

Between Seabeck and Port Gamble are the three spits. These were formerly three brothers, named Tsa-o-witt, but Dokibatt changed them into their present condition.

He found the Indians gambling with their disks and told them it was not good. He took their disks and threw them into the water, but they came back; he threw them then into the fire, but they came out; he threw them as far away as he could, but again they came back; thus he threw them away five times, but every time they returned, and so at last he allowed them to keep them for sport as they had conquered him; the only thing, as far as I know, which did.

Protection Island, below Port Townsend was, sometime previous to his coming, a part of the main land, was a woman, and the wife of the main land, which was a man. For some reason he became vexed at her and kicked her away, and when Dokibatt came he changed them into land.

The mountain back of Fresh Water Bay, nine miles west of Port Angelas, was a woman, the large rock off the cape at the west end of the bay, was her daughter, and Mount Baker was her husband. The woman was bad and abused her husband very badly. Whereupon, after bearing it for a long time, he took all his things and put them in his canoe, and went across to British Columbia, and when Dokibatt came, he changed them into what they now are. The Nootkas have a tradition of a similar great being, who came to them from the Sound.

Thus he went to all lands, gave to each tribe their language, and to some tribes special kinds of food, to some fish, to some crows, and to one tribe beyond the Klikitats, snakes. So say the Skokomish Indians, and that distant tribe is so far away that it cannot bo disproven.

Whether this is a dim tradition of the coming of Christ or not, I have never been able to satisfy myself. I only record it as I have learned it from the Indians. But it is certain that in their first learning of our Savior, they have connected the two together. For a long time I never heard his true name, but was told that it was the Son of God who did all these things, and even since I have learned it, they often call him Jesus.

The Pueblo Indians and Mexicans have a somewhat similar tradition about their God, Montezuma, at least so far as relates to his coming to this earth, and says Prof. L. H. Morgan in the fourth volume of Contributions to North American Ethhology:

"In this supernatural person who was once among them in bodily human form, and who left them with a promise that he would return again at a future day, may be recognized the Hiawatha of Longfellow's poem, the Ha-yo-went-ha of the Iroquois. It is in each case a ramification of a wide spread legend in the tribes of the American Aborigines, of a personal human being with supernatural powers, an instructor of the arts of life an example of the highest virtues, beneficent, wise and immortal.

Other writers speak of a similar tradition among the Aztecs,

Peruvians, Zuñis; the Haroks, Hupas, Pomos, Maidus and Pimas of California.

One Skokomish Indian says of Dokibatt, that he came first to create. a second time to change or make the world new, and that when it shall become old he will come a third time to make it over again. It is very plain that the tradition of his second coming as a Changer was not received from the whites, but about his third coming and perhaps about his first I have not been so positive. Still my informant said about that: "We know your teaching, but this which I tell you is different; we received it from our ancestors."

M. EELLS.

SKOKOMISH, WASH. TER.

THE RELIGIOUS CHARACTER OF THE EMBLEMATIC MOUNDS.

One of the most noticeable things in connection with the emblematic mounds is that they are so often expressive of a religious sentiment. The question has often arisen whether this sentiment was not the real motive which rules in their erection, and whether we may not consider the shapes of tne animals which are presented in effigies as the result of a peculiar form of religion to which is to be ascribed the imitations and resemblances found in the mounds. This view of the subject brings us at once to consider the religious character of the effigies, and so we take up the inquiry whether this cannot be ascertained from a study of the mounds.

The sources of information on this point will then mainly engage attention. These sources we shall discover in the mounds themselves, although many suggestions may be derived from a comparison of these works with the symbols and customs common among the living races. We consider that the effigies are the symbols of a religion which was once very powerful, and therefore we are to study the religion in the effigies.

We shall draw our information from four sources: 1st. The location of the mounds. 2d. The peculiar conformation of the effigies to the surroundings. 3d. The relative position of the effigies. 4th. The contents of the mounds. With these as our sources of evidence, we shall put the inquiry, what that religious sentiment was which prevailed, and how this affected the mound building itself.

1st. The first point which we shall consider will be the location of the mounds, but along with this we raise the question

whether this is not to be ascribed, in part at least, to a prevailing *nature worship*. The location of the mounds may indeed have been owing to other motives than the religious sentiment, for we often find a variety of uses served by it. In certain cases we find that the effigies were erected for signal stations, their location suggesting this idea. This is in accord with the customs of living races, for there is no custom more common than for them to locate sentinels on high points so that they may give warning of the approach of an enemy or may signal to the people residing near by the presence of game. There are many spots where mounds were erected with this object evidently in view, for the position of the mounds is such that the outlook from the summit is most extensive, whereas if the mounds had been placed even a few feet distant the view would have been lost.

Another object is apparent in the location of the mounds, and that is that they might serve the double use of beacons and burial places. This seems to have been a custom among mound builders generally and has been noticed in many cases among the emblematic mounds.

A third object can also be traced, namely the location of the residences of the people. It was a custom among the Mandans and many other tribes, to locate their villages upon high bluffs, where the extensive view of the river and valley can be gained. There are many places where this seems to have been the object with the emblematic mound builders. A fourth object is perceptible, namely, that of defense. This we have referred to, and have pointed out many localities where effigies seem to be placed as guards to passes in the bluffs. These four uses have been discovered and they seem to be common.

Yet notwithstanding all this we maintain that the religious one was the chief motive which ruled in the location. As proof of this we would refer to the fact that the effigies are so connected with the scenery as to give the idea that there was a kind of nature religion which prevailed among the builders of them.

We have already said that the effigies present a picture of the mental habits of the people; but we are here to show that the location of the effigies as connected with the scenery suggests a motive entirely different from any which we have mentioned. We believe that the builders were in that state where the effects of scenery upon the mental habits of the people were most powerful, and that this became in a sense a religion to them. There may have been, and probably was, with this people, the same sense of beauty which we ourselves have, and we may suppose that the location of the effigies was owing to this motive; but the point which we are to prove is that this sense of beauty and admiration of the scenery was a part

of religion. It is difficult for us in our artificial state, to realize this, and yet if we could put ourselves into the condition of the wild and uncivilized, we might see the force of it. A native impressibility was the chief feature of the people. A strange mixture of material symbolism, of religious tradition, of tribal customs and of wild life is manifested in these works.

We have seen that the emblematic mounds contain figures of the animal divinities which this mysterious people worshipped, and that they picture before us the superstitious and religious conceptions which ruled, but there is that in the locations of the mounds which convinces us that their divinities were closely associated with the natural features of the earth and that they thus became remarkable exponents of nature worship. The most eloquent and expressive thing of all is that these emblematic shapes everywhere haunt us with their presence. The streams and lakes, hills and valleys, woods and prairies, are overshadowed by their images. It seems strange that the people should have formed such conceptions, but especially strange that they should have impressed their conceptions upon the works of nature. The animals were divinities to them, but the animal effigies were placed most conspicuously upon the face of the earth and made to figure as symbols of these divinities.

There was in these effigies the union of the three elements the conspicuous location, the animal semblance and the supernatural power. It was this singular superstition which seized upon the most prominent points of land and there placed the figures of their animal divinities and made them preside over the scene by a supernatural power. It is impossible to go from group to group of these strange effigies and see how closely they are associated with the natural features without realizing that there was a religious conception which exalted them to a level of a supernatural presence. There is a vast amount of significance in these silent heaps, for they suggest not only the skill of the builders, but also the religious habits and traits of the people. A primitive symbolism finds here an embodiment illustrating the fact that this is one of the earliest methods which religion had of expressing itself.

The mere description of certain mounds, according to measurements and the printing of diagrams, as illustrating the shapes of the effigies, proves to be a very small part of the record, for this very feebly gives the idea which prevailed in the minds of the builders, and leaves out altogether one esssential element, namely, the religious motive. A description of the topography and natural scenery is better, for this shows how closely associated the mounds are with the scenery, and reveals something of the love of nature which prevailed among the builders.

The thought which we draw from a close study of the effigies in connection with their location is that they embodied a sys-

tem of nature worship which was very powerful, and that this was one motive which ruled in their erection.

This is confirmed by tradition. It is noticeable that primitive races were all very impressible to scenery. Mr. Charles Leland speaks of the Algonquin myths as if they were of historic origin, and compares them to the Eddas; but the Eddas and the myths both illustrate the point, to which we refer. The scenery of Norse land may be recognized in the Norse myths, and the scenery of New England can be recognized in the Algonquin myths, but both show that scenery is a very essential element in mythology.

Locality always leaves its mark on native tradition, and native myths also leave their marks on localities. We should know from the New England myths that the people who held them were residents of the seashore, for the animals which are made to figure in these myths are animals peculiar to the sea. We know that they dwelt in a region where were rocks and romantic scenery, and that they were a people who were influenced by this peculiar scenery. Their traditions are many of them, localized, the rocks often being made to symbolyze their myths. It is singular, however, that the myths which fix upon scenes in nature are those which remind one of the animal divinities which were worshipped. The figure of the moose and the turtle and other animals have been recognized in certain strange and contorted figures in the rocks and mountains, and myths have been connected with them, the myth having evidently been made to account for the resemblances.

This is not peculiar to New England. We learn from Rev. M. Eells, Rev. S. Jackson, D.D., and others, that the tribes of the northwest coast have many of their myths connected with the different objects in nature, such as mountains and valleys, streams and rocks, showing that with them there was a tendency to throw an air of religion over nature. The same thing has been illustrated by Dr. Washington Matthews, in his article on Navajo Myths. Here the animals are all associated with the different localities, the animals and the scenes of nature having been regarded with a peculiar sentiment which makes history and religion identical. We present this, then, as a proof that the emblematic mounds were regarded in a religious light, the scenery and the animal shapes both proving the different elements in the prevalent nature worship.

The Chinese have a peculiar superstition which is worthy of notice here. It is called in English *geomancy*. The idea is that the scenery is haunted with certain spirits, which are the spirits of nature. In other words, there are supposed to be certain occult influences in nature, which affect mankind. They prevail over earth, air and water, but particularly the hills and streams. These influences come into connection with human destiny by

gliding along the summits of hills, through valleys, into groves, or over tall trees, and in general by any extended object in the landscape. This geomancy is with them closely allied to ancestor worship. If the grave of an ancestor be located at such a point as to command these hidden forces and compel them to blend in harmonious and favorable action, that tomb will be a fount of prosperity to succeeding generations, but if the tomb be not correctly located, adversity will inevitably follow. Thus we see that superstition has much to do with the location of graves, and that this is an element which fixes upon scenery as the chief source of inspiration. We maintain that if this was so common among living races, it was also common among the prehistoric people, and to one or the other of these superstitions may we ascribe the locations of the effigies by the emblematic mound-builders.

II. The conformation of the effigies to the shape of the ground is suggestive of animal worship. So strong was this tendency to people the scenes of nature with their divinities, that it led to the transformation of the forms of earth by the aid of art into shapes which should represent the animal divinities to the eye, but the transformation indicates that there was prevalent among the builders a primitive animism which also connected itself with animal worship, and so combined the two faiths in one.

There are many places where the effigies are conformed to the shape of the ground so that the natural and artificial are hardly distinguishable, both combining to represent the animal figure. There was a strange commingling of earth and animal in one combined shape, the hand of man having transformed the natural shape into an animal figure, and making both together to serve as a representative of the divinity which was worshipped.

The suggestion of the particular shape which should be given to the effigy would come from the natural conformation of the ground, but the embodiment of the shape would be completed by the work of art. It is strange that so many figures should have been placed upon the surface of the earth bearing so close a resemblance to the configuration of the soil itself, but it would seem as if the intent of the builder was to make everything in nature expressive of divinity. There are places where the hill top has an effigy upon its summit, the contour of the hill being brought before the eye as suggesting the shape of the effigy itself, but the effigy, by its skillful conformation to the shape of the earth, turning the hill-top into an animal shape and making it expressive of the animal divinity. We give a cut to illustrate this point (Fig. 85.) The locality where this group of effigies is found, is near the city of Madison. Here the ridge which intervenes between the two lakes, Lake Wingra and Lake Mo-

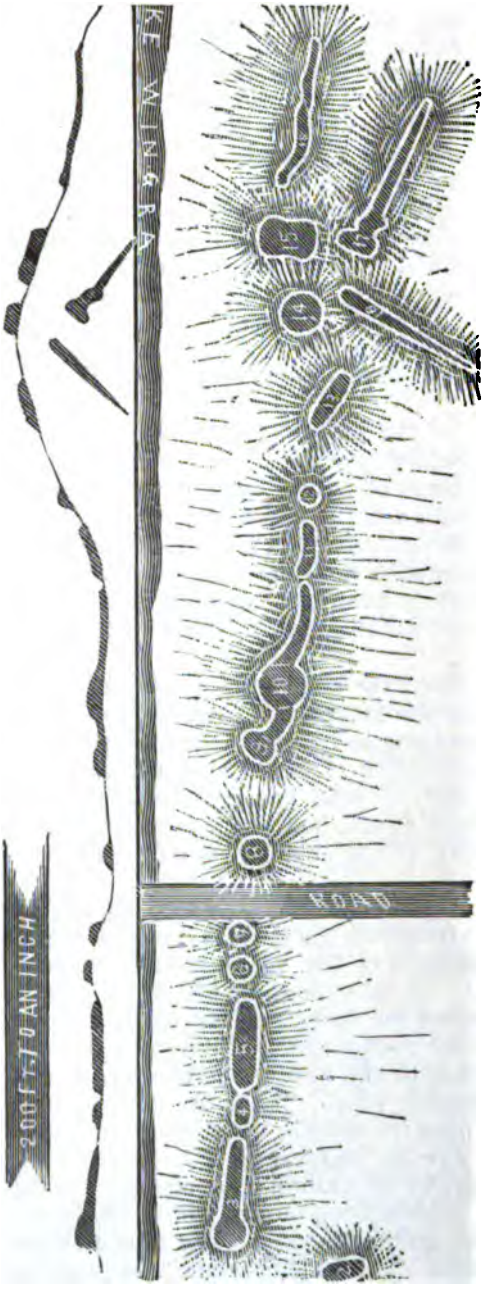

Fig. 85. Mounds at Lake Wingra.

nona, is a peculiarly grotesque and contorted one, rising above the surrounding land and thrusting its summit high into the air, so as to be a noticeable feature in the entire landscape. This contorted ridge the Mound builders siezed upon as a place on which to erect their effigies. The ridge is covered throughout its entire length by a series of mounds, each of which has its peculiar prominence, from which a view of the surrounding country can be gained. Many of these are ordinary burial mounds, and do not differ from others except that their place must have been chosen with the express object of obtaining an outlook or view of the surrounding country. The point to which we would call attention especially, is that in the center of this ridge there is a group which is composed of several effigies surrounding a central burial or altar mound. A description of this altar has already been given and we refer to the group mainly to illustrate the conformation of the effigies to the shape of the earth. It will be noticed that several of the effigies and

especially the eel (18) or serpent, the panther (17), the nondescript figure (10), and the war club (3), are closely conformed to the character of the ridge, showing that there was an intent to make both the natural and artificial shape to embody the animal effigy. We refer to it here only as illustrating a conception which is novel, and as proving that the effigies had at times, at least, a religious significance. There are several other localities where the same singular freak

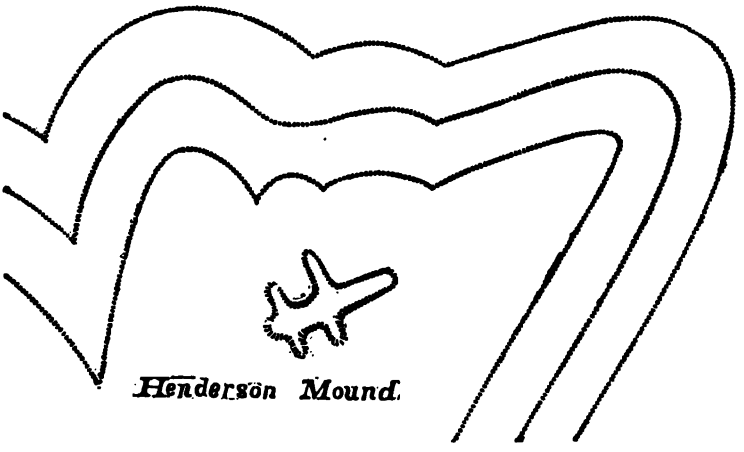

Fig. 86. Mound and Bluff at Beloit.

of fancy, if it can be so called, is exercised. At the east end of Lake Monona there is a series of emblematic mounds which illustrates the point (See Fig. 32 and 33.) This locality we have described before,* but we refer to it again so as to represent the mounds in their connection with the topography. It will be noticed that the shape of the effigies and the shape of the ground closely correspond. These effigies are situated on the edge of the water, and are moulded to the surface of a series of sand ridges or knolls so as to give the knolls and the mounds, shapes resembling animals, the mounds and the knolls both combining together to bring out the figure. Another illustration of the same point may be found near the city of Beloit. Here the effigy is a lizard, and the object seems to have been to make the shape of the lizard conform to the shape of the hill on which it was erected, so as to bring out the contour of the hill top and show the animal resemblance which was recognized in it. Fig. 86.

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*See Am. Antiquarian, Vol. VI, No. 4.

The best illustration, however, of the point, is seen at Great Bend. Here hill, which is visible at a great distance, has an effigy on its summit, a cut of which is given in Fig. 87. This is near the brow of the hill and like the preceding specimens is so closely conformed to the contour of the hill as to give the idea that the shape was chosen because of its resemblance.

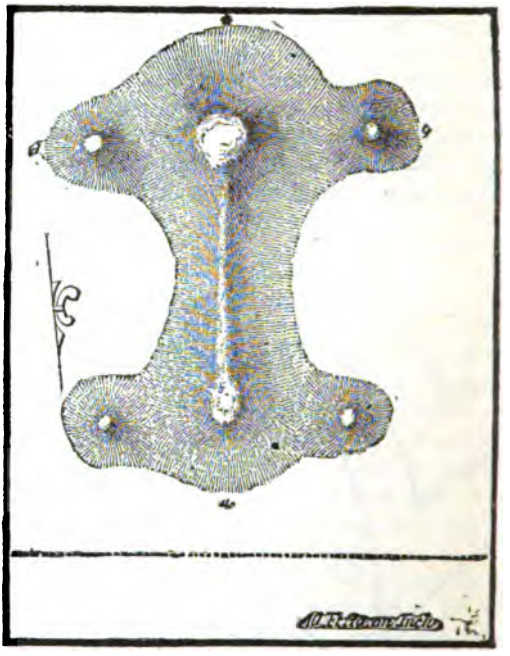

Fig. 87. Altar Mound at Great Bend.

This is in accord with the sentiment and character of the native races, and is what would be expected from the people who erected these mounds. There are traditions among the later tribes which show the religious sentiment to be the most powerful. This sentiment leads them to fix upon the prominent features of the landscape, and to invest them with a peculiar awe and sacredness. It is said that among the tribes who formerly inhabited the island of Mackinac, there was a superstition in reference to the island that it was haunted by a great turtle divinity, the shape of the island being in the shape of a turtle, and giving the idea that it was the sacred haunt of this great turtle. Schoolcraft and other travelers say it was the custom among the natives to present their offerings to this divinity as they approached, and that the island was in a manner regarded as sacred. Lieut. D. H. Kelton, U. S. A., makes known the fact that the name of the island signifies in the Algonquin tongue, "the big turtle."

A similar superstition also fixed upon a bluff in the island which, especially when seen at some distance, resembled a rabbit, and the name Sitting Rabbit was applied to the bluff. Lieut. Kelton says the Indians were in the habit of offering a sacrifice in the form of tobacco strewn on the water when passing that point on a journey, supposing that a spirit presided over the neighborhood. There is no doubt that the effigies

were erected at times to commemorate these beliefs, and by this means perpetuated the traditions which had gathered about the various localities and made the prominent features of the landscape, in a manner, sacred. The traditions, have, however, been lost, and we have only the effigies preserved to show that similar religious beliefs prevailed among the mound-builders of this region. It should be said, however, that the cultus which prevailed among the emblematic mound-builders was such as would favor this peculiar superstition.

Among the earliest of religious beliefs is that of Animism or nature worship. Next to this in the rising scale is animal worship, and following it is sun worship. Animism is the religion of the savage and hunter races, who are generally wanderers. Animal worship is the religion of the sedentary tribes, and is peculiar to a condition where agriculture and permanent village life appear. Sun worship is the religion of village tribes and is peculiar to the stage which borders upon the civilized. It is a religion which belongs to the status of barbarism, but often passes over into the civilized state. Now, judging from all circumstances, and signs we should say that the emblematic mound builders were in a transition state, between the conditions of savagery and barbarism, and that they had reached the point where animal worship is very prevalent.

This habit of fixing upon the scenes of nature, and transforming them into animal divinities is evidence, in our opinion, that the old superstition that nature was possessed by a spirit had given way to the idea that animals were the objects of worship and were to be regarded as totems or divinities. The idea that localities were haunted by divinities was, however, still retained and there is no doubt that many of the effigies which surmount the hill-tops perpetuated their local traditions and were reminders of these divinities to the people which inhabited the region.

III. We now reach a third point, the relation of the effigies to idolatry. The question arises whether the emblematic mound builders ever erected effigies as idols and regarded them as objects of worship. Idols are generally isolated, and so the answer comes to us from the relative positions of the effigies. It is a singular fact that nearly all of the effigies which have been discovered in other states are isolated, but in this state the cases are rare. There are to be sure, many localities where effigies are arranged so as to form a sacred enclosure, and there are evidences that in these enclosures religious rites were practiced; but it has not yet appeared that the effigies were themselves thus isolated and made objects of worship. This is an interesting point. The location of the effigies sometimes gives the idea that a superstitious awe was felt toward them as if they were divinities presiding over the scene, but it also shows that the effigies were devoted to familiar and practical

uses, the divinity serving both as a guardian divinity and as a watchtower or lookout for the people. It is to be observed that the cases are rare where an effigy is isolated and kept at a distance, as if it were too sacred for approach. This custom of erecting single effigies on isolated hill tops, where they could be seen, but owing to the distance and isolation could not be approached, was, we may say, common in other parts of the country. It appears that the two effigy mounds found in Ohio, namely, the serpent and the alligator, were thus situated. The alligator mound was erected on a high hill, and overlooked the whole valley where are the works which have been noted as the most extensive and complicated of any in the country, namely, those at Newark. Fig. 88.

The location of this effigy at the head of the valley, on so prominent a hill top, would indicate that it was regarded with superstitious feeling, and it may have been considered as a guardian divinity for the whole region.

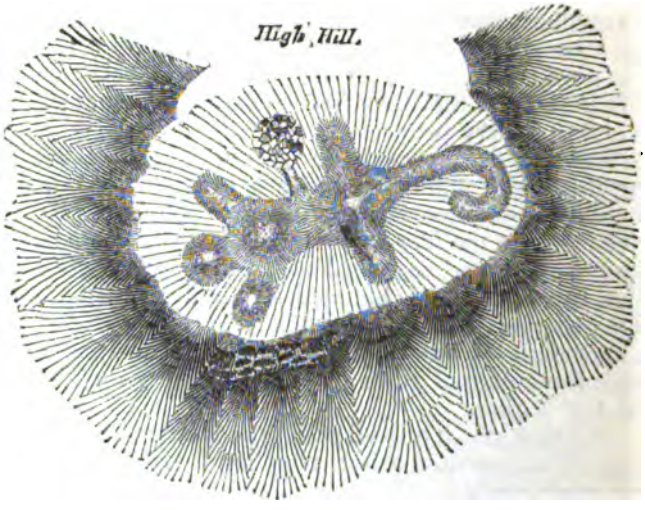

Fig. 88. Alligator Mound at Granville, Ohio.

It is possible that it perpetuated some tradition which prevailed in the locality, and the hill top and the effigy were associated together, because of the tradition. The erection of the altar near the effigy would indicate also that it was a place where offerings were made, and would suggest that the sacrifice here had become formal, and possibly was conducted by a priesthood, rather than in the hands of individuals as voluntary. We cannot say that this was true of the great serpent; and yet the oval mound in front of the serpent effigy would indicate that this also was used as a place of sacrifice, and that here was a locality which tradition had fixed upon as a place where

Indian Graves.
SMALL RUN
CREEK
Precipice
B
Mound 10 ft. high.

some divinity had dwelt. We suggest also in reference to this serpent mound, that possibly the very trend of the hill and of the vallies, and the streams on either side of it, may have given rise to the tradition. The isolation of the spot is remarkable. The two streams which here separate the tongue of land from the adjoining country unite just below the cliff, and form an extensive open valley, which lays the country open for many miles, so that the cliff on which the effigy is found can be seen to a great distance. The location of this effigy is peculiar. It is in the midst of a rough, wild region, which at the present is difficult to approach, and according to all accounts is noted for its inaccessibility. See Fig. 89.

The shape of the cliff would easily suggest the idea of a massive serpent, and this with the inaccessibility of the spot would produce a peculiar feeling of awe, as if it were a great Manitou which resided there, and so a sentiment of wonder and worship would gather around the locality. This would naturally give rise to a tradition or would lead the people to revive some familiar tradition and localize it. This having been done, the next step would be to erect an effigy on the summit which should both satisfy the superstition and represent the tradition. It would then become a place where the form of the serpent divinity was plainly seen, and where the worship of the serpent, if it can be called worship, would be practiced. Along with this serpent worship, however, there was probably the formality of a priestly religion, the rites of sacrifice having been instituted here and the spot made sacred to them. It was literally "sacrificing on a high place." The fires which were lighted would be seen for a great distance down the valley and would cast a glare over the whole region, producing a feeling of awe in the people who dwelt in the vicinity. The shadows of the cliff would be thrown over the valley, but the massive form of the serpent would be brought out in bold relief; the tradition would be remembered and superstition would be aroused, and the whole scene would be full of strange and aweful associations.

The various authors who have treated of this serpent mound have maintained that the tradition which found its embodiment here was the old Brahmanic tradition of the serpent and the egg.

Mr. S. G. Squier connects the effigy with the serpent worship which is so extensive in different parts of the world, and Schoolcraft has expressed the opinion that it was a sign of the Hindoo myth, and even Drake in his new volume on Indian tribes suggests the same. We express no opinion upon this point but quote the description of the mound as given by Squier and Davis.*

*While writing this article we have received a letler from Rev. J. P. McLean, in in refereuce to this serpent effigy. He says that the figure as described in "ancient monuments" by Squier and Davis is decidedly wrong. I have been to the mound three times; the last time, last month (September, '84.) I have furnished a correct plan to the "Bureau of Ethnology." I took an engineer with me. First, there is a

"Probably the greatest earthwork discovered at the west is the great serpent. It is situated on Rush Creek, at a point known as Three Forks, upon a high cresent-formed hill or spur of land, which rises one hundred and fifty feet above the level of the creek. The side of the hill next to the stream presents a perpendicular wall of rock, while the other side slopes rapidly though, it is not so steep as to preclude cultivation. Conforming to the curve of the hill and occupying the very summit is the serpent, its head near the very point, and its body winding back 700 feet, and this terminating in a coil at the tail. The neck of the serpent is stretched out and slightly curved, and its mouth is opened wide, as if in the act of swallowing or ejecting an oval figure which rests partially within the distended jaws. This oval is formed by an embankment of earth, without any perceptible opening, four feet in height and is perfectly regular in outline, its traverse and conjugate diameter being one hundred and sixty feet and eighty feet respectively. The ground within the oval is slightly elevated; a small circular elevationof stones much burned once existed in the center, but they have been thrown down and scattered by some ignorant visitor, under the prevailing impression, probably, that gold was hidden beneath them. The point of the hill within which this egg-shaped figure rests, seems to have been artificially cut to conform to its outline, leaving a smooth platform ten feet and somewhat inclining inward all around it."

The erection of isolated mounds was not common in Wisconsin, the custom here having been to isolate an altar or beacon mound, and to make the effigies as guards to this mound. This style of sacred enclosure is, however, quite common, several such having been noticed by different persons. We have in Wisconsin several specimens of what may be called sacred enclosures. One such has been described by Mr. S. Taylor. It is situated near Muscoda. The peculiarity of the group can be seen from the diagram, Fig. 90:

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frog which has just laid the egg. Second, the egg is between the legs of the frog and in the serpents jaws. Third, the convolutions are very marked. This letter puts a new construction on the shape of the effigy and would indicrte that the serpent and the egg were not taken from the Bramanic tradition but had reference to some aboriginal tradition. We do not decide as to the correctness of Mr. McLean's description. Prof. F. W. Putnam with Mr. J. Kimball has visited the place and taken the dimensions of the effigy. Dr. J. G. Phene also visited the locality in 1882. Mr. J. W. Traber, who lives in the vicinity, has also sent ihe author discriptions of the serpent effigy. None of these gentlemen have recognized the frog. We give the account of Mr. McLean as a new view. All opinions, however, confirm the point which we are illustrating. All agree that the serpent effigy perpetuated some unknown tradition. The probability is also that the serpent effigy was regarded as peculiarly sacred. We give the cut taken from "Ancient Monuments," and call attention to the peculiarities of the place because it answers the purpose for which we use it mainly. There is no doubt but that this was an effigy which was connected with the native religion of the mound builders and we refer it as one illustration of a form of religion which may have prevailed among the emblematic mounds.

A description of this, is given by Squier and Davis as follows: "The ground is here prominent; it has descent to the north, south and west of the embankments; to the east it spreads into a broad plateau, upon which, as well as to the southward, are numerous other embankments of various forms and dimensions. From the top of the principal mound, occupying the center of the group, and within 400 yards to the westward may be seen at least one hundred elevations similar to those forming the boundaries of the so-called enclosure. Mr. Taylor calls it the "citadel" and says the figures, including the group are so arranged as to constitute a sort of enclosure of about one and one-half acres.

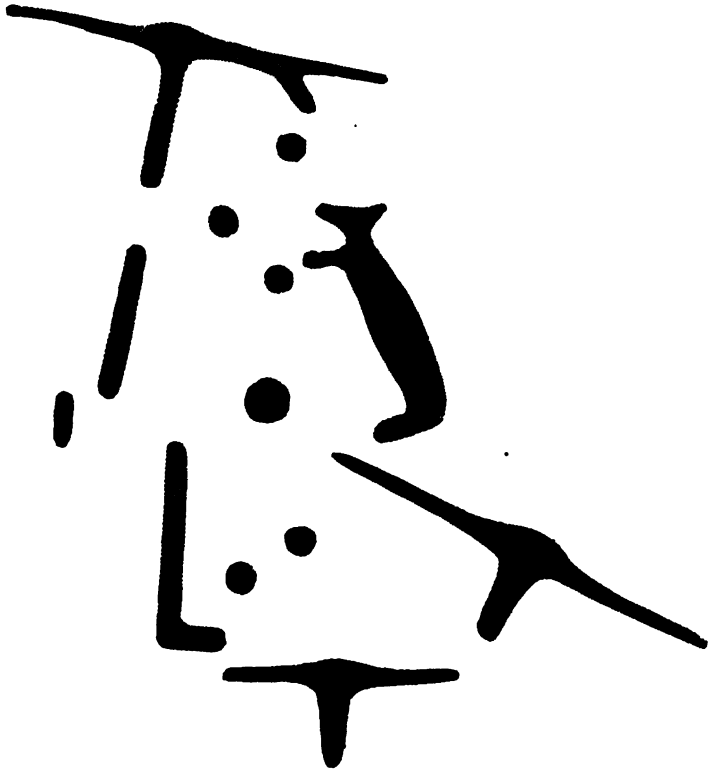

Fig. 90. Sacred Enclosure near Muscoda.

Another enclosure similar to this, has been discovered by the writer on the banks of Lake Mendota.* Here the view is quite extensive, but the hill is not so prominent as that described by Mr. Taylor. The enclosure, however, has many of the same charac-

*An illustration of this group will be given in a future number.

teristics. The place is known by the name of Merrill's Springs, and there is here a beautiful spring which pours its water into the lake, and which was evidently prized by the prehistoric inhabitants. This spring is guarded by a long row of conical mounds, which are connected with one another by an artificial ridge or wall. At one end of the row is an effigy of a bird, which overlooks the lake to the north and west. The row is so situated that it forms a barrier against approach to the spring as it follows along the edge of the bluff or hill which here slopes to the edge of the water. At the east end of the row is the group referred to. The peculiarity of the group is that it serves, 1st, as a protection to the spring, by filling in the space between the summit of the hill and the water's edge. 2d. It is attended with a large conical mound, which may have been used both as a beacon and as a burial place. 3d. The chief peculiarity is that the effigies so surround the central mound as to make an enclosure showing that it was used both as a beacon and as a place of worship. The spring was evidently a place of resort and it is possible that the quasi wall enclosed a small village or camp, but the enclosure with its effigies surrounding the central beacon or burial mound is the distinguishing feature of the group.

This double use of effigies has been noticed in many places, notably at Lake Koshkonong. See Fig. (10.) Here may be seen the effigy of the panther (5) and the catfish (2) surrounding a central beacon mound (4) and near this a mound which we have eslewhere called an altar (3) though it has never been excavated so as to show whether it was such or not. The group was, probably, used as a place where beacon fires were lighted, for it is situated on a high bluff overlooking the lake and can be seen for a great distance. It would seem, however, that it was also used as a place of sacrifice for the mound in front of the beacon has a shape which is often used as an altar. To this point we shall refer again. The effigies are so situated as to form an enclosure and the whole group is in a manner isolated, the ground falling away from this point on all sides.

There is another group in the same vicinity where effigies of various kinds surround central mounds giving the idea that it was a place where there was a sacred residence either of chiefs or priests or medicine men. See diagram (3.) This group is overlooked by the effigy of a lizard, but there are many other effigies of various kinds which surround the enclosure making the group to appear as if it were intended for both a residence and a sacred enclosure.

The religious use of the effigies is the point which we have dwelt upon in connection with these locations, for this is the first lesson which the situation of the mounds suggests. They may

not prove that fetichism or the worship of effigies or even animal worhip, was the religion prevalent among the builders of the animal effigies, but I think the object of the so called enclosure was in part, at least, to gather around the beacon mounds the idea of sacredness, the effigies furnishing guards to these mounds and making the places in a sense exclusive. It is probable that the glare of the beacon fires when thrown upon the effigies would arouse a fear for the animal divinities, and so idolatry or effigy worship may have existed, but on this point we do not care to dwell. Our main argument is that the effigies were frequently used for religious purposes. If we cannot fix upon the exact form of the religion which prevailed we can nevertheless see that they were so used. We have maintained that nature worship was prevalent. This may, however, have been mingled with animal worship and this again with a kind of fetichism. The form of religion was probably very indefinite, combining all the characteristics of primitive animism, and running over into the stages of a primitive idolatry; nature worship and animal worship being the intermediate stages. We conclude that the shapes of the earth were fixed upon by animism, and that nature worship was continued in the midst of animal worship. We conclude also that this animal worship seized upon the effigies, and made them abettors to that faith. We surmise that tradition fixed upon certain localities and brought nature worship and animal worship into a combined localized superstition. We conclude, finally, that the rites of sacrifice and the custom of lighting beacon fires made the forms of nature to reflect animal figures, thus mingling the two superstitions more completely, and from their very indefinite and shadowy characters, making them very powerful.

IV. We now arrive at a fourth view of the religion exhibited by the emblematic mounds, and that is that it was a religion attended with sacrifices. The evidence on this point we take from the contents of the mounds. The contents, however, prove that sacrifices were common.

We have thus far treated of the peculiarities of the effigies in their bearing upon the use or purpose to which they were put. We have found that the religious character was uppermost. This is exhibited, 1st, in the choice of the location, the evidence being that they were made conspicuous because of the reverence which was felt toward them as the images of their animal divinities; 2d, the conformation of the effiigies to the shape of the ground increased this impression, it being one part of a primitive religion to assign a double character to all objects of worship; 3d, the isolation of the effigies in certain localities conveying the idea of sacredness, we were led to consider that the same character was to be ascribed to certain groups in this state, the evidence being that there were certain groups in which enclos-

ures or sacred places of assembly were to be found. 4th. We are now to consider the contents of these mounds as furnishing proof that they were sometimes used as places of sacrifice or as places where religious rites were practiced. We have spoken of a certain class of mounds which in their shape we have called altars, and we shall therefore take this class as the one which we are to examine and whose contents we are to consider. It is a singular fact that nearly all of the localities which we have mentioned in this paper have presented a mound which judging from the external appearance was an altar. We here give a cut which shows the shape of an altar mound, see fig 91. We do not say that all altars are in this shape, but we have found that wherever such a mound has been found situated on high land where it may be conspicuous to the site, and especially if attendad with a group of effigies surrounding it, there the mound has always proved to be a place of sacrifice. The mound which we have depicted in the figure has been explored and described by Dr. J. N. Dehart.

This mound was in a very conspicuous situation. From its summit an extended view of the surrounding country can be had several miles in every direction. This mound is situated on the north side of Lake Mendota. It was also attended by a beacon mound. It has been excavated and proved to contain layers of gravel, of sand, of black loam, three feet deep; another layer of gravel, then a deposit of earth, and below these ashes, charcoal, and flints, the whole lying upon an altar of stones. The altar was about one and one-half feet high, three and one-half in length, and one foot in width. The figure given, illustrates the manner of erecting the mound and the shape of the altar; but the location of the mound shows that the object was to make it a place of cremation and as conspicuous as possible.

Another mound which, in our opinion, was an altar, is the one which has been referred to above, as situated at Great Bend. We give a figure of it here (see fig. 87) that our readers may gain an idea of the characteristic shapes of the so-called altar mounds. It will be noticed that there are resemblances between this mound and the alligator mound at Granville, especially in the protruberances which arise from the back and hips and shoulders of the effigy. The animal is, however, not the alligator, but the turtle or tortoise, the turtle being represented with legs and tail drawn up, but it at the same time combines in the effigy six conical mounds. This mound has not been excavated and so cannot be proved to have been an altar yet there are two large tumuli or burial mounds near it, and many other signs which would indicate that it was so used. It is located on the hill above the site of an ancient village, giving rise to the idea that it was the regular place of sacrifice for the residents of this village. It is worthy of remark that a mound similar to this has been excavated and proven to

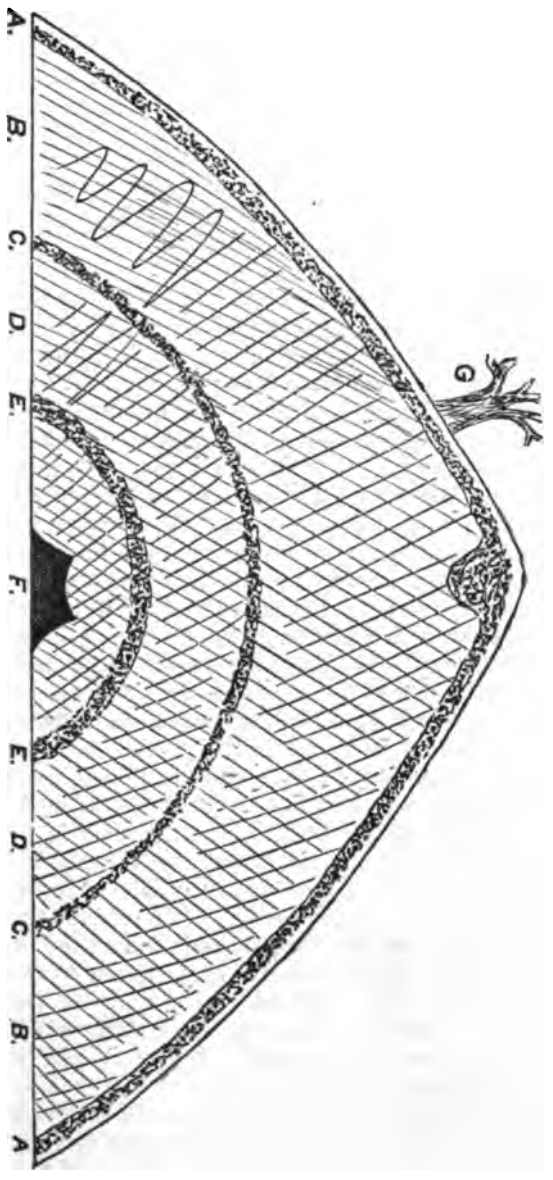

Fig. 91. Altar Mound, near Madison.

For description of this altar mound see report of A. A. A. S., for 1888, also report of Academy of Science of State of Wisconsin for 1879.

have been an altar, and to this mound we now call attention. At the beginning of this paper we referred to a group of mounds which is situated on Lake Wingra, and which was remarkable for its location and other characteristics. Fig. 85. The mound which we are now to describe is the central one of this group. This is a locality which illustrates all the points which we have made and therefore is worthy of especial mention. The effigies contained in it are conformed to the shape of the ground. The spot is one which, owing to its isolation and peculiar character would be regarded with awe and idolatrous fear. Whether any tradition had fixed upon it or not, it was evidently a place where religious rites were celebrated. It contains a sacred enclosure, the effigies having been arranged around two central mounds so as to guard them from approach. These two central mounds we have designated as a beacon and an altar, and have compared them to the mounds in other groups to show that they were places for beacon fires and sacrifices.

We are now to give the proof of this from a review of the contents of the mounds. The group was explored in 1879 by a committee appointed by the Academy of Science of the State of Wisconsin, and from the report we take the following facts:

According to the account given by Prof. Nicodemus it contained a fire-place two by two and one-half feet, with a layer of charcoal and ashes two inches in thickness. This was found at a depth of five feet. In it was a piece of cloth partially burnt and below it were found the portions of a skeleton nearly decomposed, but the whole altar and mound showed the signs of fire. The beacon mound is found in the same enclosure, and this proved, on examination, to have contained two fire- places, one three feet and the other at five feet below the surface. There were also found in this mound the fragments of four or more skeletons, with pieces of pottery and other relics. The altars contained partially burnt bones and ashes, showing that here human beings had been cremated. We refer to this group because it proves what kind of mounds were used as sacrificial places. The shape of this altar is very similar to the one which is given in fig. 87, and resembles also, with its corresponding beacon mound, the two which we have described as found on the banks of Lake Koshkonong. Fig. 10. The altar mound has a peculiar form, resembling that of a tortoise shell, but is destitute of the protruberance which would represent the limbs of the tortoise. The locality seems to have been well chosen, for its central position makes it conspicuous in the landscape, and the isolation of the spot itself throws an air of sacredness around the place. The peculiar shape of the ridge would make it a prominent object, but the erection of the effigies on the summit and the spurs of the ridge, have transformed the earth into animal shapes. The sheets of water contained in the two lakes,

Lake Monona and Lake Wingra, come so near to the foot of th ridge as to give an unimpaired view of the spot for a great distance. It needed only the kindling of fires on the summit to throw a glare of light across the water and to fill the whole landscape with shadows. It was a favorable place for the lighting of beacon fires and especially favorable for the practice of sacrificial rites. We can imagine how weird and wild the place was when the sacrifice took place. We refer to this locality not so much with the intent of describing the place as to point out the features which make it typical.

It will be noticed that the various elements which we have referred to as proofs of a religious intent are all here embodied. The location is conspicuous; the shapes of the effigies are conformed to the ground and give expression to the shapes of the earth; the isolation of the spot throws an air of sacredness about it and the arrangement of the effigies around a central altar and beacon make the group to assume the shape of an enclosure; but the contents of the mounds prove conclusively that the mounds were erected for a religious purpose. There are many other groups similar to this and the fact that all of them are so striking in their location has led the writer to trace out the different elements and to discover what features were peculiar to the religious works. We maintain that places of sacrifice or of cremation were common and that the religious use of certain groups can be easily ascertained. There are to be sure many other groups of effigies which have not all of the characteristics here embodied, yet it is evident that the effigies had frequently a sacred or religious character.

EDITORIAL.

ANTHROPOLOGY IN THE BRITISH AND AMERICAN ASSOCIATIONS.

The year 1884 has been made memorable to the scientific world by the meeting of the two associations, the British and the American upon American soil; the sessions of the British having been placed at Montreal and those of the American, one week later at Philadelphia in order to accommodate those who might desire to attend both meetings. A large number of British scientists took the voyage and were present at Montreal, and the Canadian scientists were out in full force. The fellows of the American Association had been invited to sit as honorary members and quite a number of them were also present. As a result the attendance upon the British Association was unusually large, having run up to 1,700 and more, and the meeting is said to have been one of the most successful ever held.

At this meeting at Montreal anthropology for the first time took the rank of a section, this department having never before been prominent enough in the British Association to warrant separate sessions. This is significant, for it not only shows that anthropology is making great advance in Great Britain but that, especially in America, great interest is taken in the subject. No country offers a better field for original research, and nowhere is there likely to appear such progress in the department as on the American continent. It is noticeable that the papers read at both associations were mainly upon American subjects..

The opening address was made by Prof. E. B. Tylor, giving a view of the progress of anthropology in all lands.

The first point which Prof. Tylor brought out was in reference to Paleolithic man. He says the evidence increases as to his wide range. He extended into Asia where his characteristic rude implements are found in the caves of Syria and the foot hills of Madras. He then touched upon the explorations of the north-men but concluded that the voyages ought to be reduced to a narrower limit, the mouth of the St. Lawrence being in his opinion the extremity. His next point was upon the relation of American Anthropology to the Asiatic. The tertiary bridge referred to by Prof. Marsh was in his opinion the bridge over which America received its human population. This is a conjecture which comes from the geological standpoint and not from the anthropological.

The subject of sociology, especially with reference to the question of family descent was then discussed and the works of

McClennan and Morgan were reviewed at length. The last point was the question of the antiquity of man. The speaker said that there was less tendency to treat everything historic such as Lake dwellings and Central American cities as of great antiquity but maintained that the arguments drawn from alterations in valley levels, changes of fauna, evolutions of races, language and culture go to prove that the human period was long compared with the historical or chronological time.

Prof. Dawkins read a paper on the "Range of the Eskimo in Space and Time," maintaining as he has before in his book entitled "Cave Hunters," that the Eskimos are the survivors of the prehistoric race known in Europe as "Cave Dwellers." The Eskimos are found along the coast of the Arctic ocean, from Larbador and Greenland to the west coast, extending into Asia. They appear to be a receding race, retreating northward before the stranger and more warlike tribes, such as the Indians in America and the Mongols in Asia. The opinion has been expressed that the Eskimos were the survivors of the pre-glacial people, and that they formerly dwelt as far south as New Jersey on the Atlantic coast, and that their residence along the Pacific coast may be traced back to a very early date. This is mainly conjectural, for no direct connection between the preglacial people and the Eskimo has yet been discovered, and very few resemblances between the paleolithics of the gravel beds or the relics of the shell heaps, and the relics extant among this people. Dr. Dawkins, however, ascribes to this people the bone implements which have been exhumed from the caves of Europe, and imagines that they emigrated to America by way of Behrings Strait. The evidence on this point is found by him in the specimens of drawing found on the bone implements which have been taken fnom the caves, which are said to resemble the drawings found among the Eskimos of America. Sketches of reindeer and the outline of the head of an elephant may be seen on bone relics taken from the caves. Similar sketches of reindeer may be seen upon the bone implements of the Eskimos. The cave dwellers were evidently hunters and fishermen. They wore necklaces, painted their faces, manufactured skin scrapers, lance heads and other implements of stone and bone. They used bone needles, dressed in skins and wore long gloves. They were contemporaneous with the mastodon. The Eskimos are distnguished by the same traits, led the same kind of life, used the same kind of weapons and resembled them in all particulars. When the mammoth and the other animals contemporary with it migrated to America, the cave men who hunted them, naturally followed. Remains of this animal are found in great abundance in western Europe, northern Asia and through North America.

In discussing the paper, Prof. Rupert Jones maintained that

the skeletons found in the caves were those of a tall people, who differed from the Eskimo in all respects. Dr. Wilson remarked that the similarity of implements and usages was no greater than that which was common among barbarous races whose surroundings are similar.

Prof. Dawkins maintained that the cave dwellers did not bury their dead, and that the skeletons found were intruded burials. Dr. Wilson, however, maintained that the Eskimos do not bury their dead because of the climate, which makes burial impossible.

A paper upon man and the mastodon was read subsequently by Dr. Wilson, who compared a skull from the loess of Podbaba, near Prague, with one found in alluvium, near Kankakee, Illinois, along with the tooth of a mastodon. There were certain resemblances between these two skulls and the famous Neanderthal skull, which Dr. Huxley calls pithicoid, and which has been the *articulo stantis* of the Darwinians and those who hold to the extreme antiquity of man. The Kankakee skull was found under circumstances which seemed to indicate as great antiquity for it, as the Neanderthal and Podbaba, but it is a *well formed Indian skull of the usual type.* As to its being found with the mastodon's tooth. Dr. Wilson concluded that it was the result of accident, but he thinks that the mastodon was later on this continent than on the eastern continent, and that it may have been contemporaneous with man.

Another paper upon the Eskimos was read by Lieut. P. H. Ray, especially describing those tribes upon the western shores of North America. He gave his reasons for believing that the Eskimos had occupied the far north from a remote period mentioning the fact that snow goggles had been dug up twenty-eight feet below the surface of the ground. They are a people of the ice, and all their habits of life are formed from their proximity to it. Lieut. Ray maintained that the Eskimo had no religion, although they are very superstitious, yet acknowledges that they have ideas about a superior being who created man, and an evil spirit who is to be propitiated. They do not bury their dead, but leave their bodies to be devoured by the dogs, and seem to think that this is the end of man, and have no conception of a future existence.

Mr. C. A. Hirschfelder read a paper on discoveries in Canada, and described the relics which he had excavated himself from Indian graves and mounds, having opened over three hundred of them himself. The Huron ossuaries or bone pits were also described by him. The earth-works of Canada are considered to be mainly the work of the Hurons and other tribes known to us. One mound, or earthwork was, however, of such a peculiar character that he is inclined to ascribe it to the mound-builders of the Ohio valley. It is situated on an elevated ridge in the county of Elgin, a short distance north of Lake

Erie, and has the appearance of having been a strong hold. It comprises about eight acres, the dimensions being 428 by 325 feet. This is surrounded by a double wall, with a ditch between 3 feet wide and 5 feet deep. The outer wall is 30 feet thick, and has on the inside a ledge where a row of men could lie at full length. There were numerous burials in the vicinity, and trees 11 feet in circumference, which must have been nearly 400 years old, were growing within this fort. The conjecture was that the mound-builders had built this as their fortress in a conquered territory, north of Lake Huron, but that they were finally expelled by the native tribes.

A paper on the Huron Iroquois as a typical race, was read by Dr. Wilson. Their crania were compared to those of the Ohio mound builders and the differences were pointed out. Dr. Wilson maintained that the Indian skulls are long and well developed, those of the mound builders are nearly globular. The latter people were numerous and well organized, but they did not attain to a high degree of civilization. His opinion was that the mound builders were a people of not a very high type, who were under the rule of a superior priesthood, a sort of bramhimical class, by whose direction their remarkable engineering works were constructed.

Under the head of archaeology proper several papers were presented; but the most interesting of them were those by Mr. F. H. Cushing on the development of industrial and ornamental art among the Zunis, and by Mr. H. Hale, on the nature and origin of Wampum.

Mr. Cushing traced the progress of the Zunis from a low and rude condition of art and architecture up to their present status, illustrating the stages of progress by the specimens of art and by drawings of their architecture.

He maintained that civilization sprang up among this rude people, with no external impulse, and that in a few centuries it had reached to a high stage. He said that the opinions which some anthropologists have entertained concerning the point, that many thousand years were needed for savage people to reach the stage of civilization, were erroneous. The stages of progress in architecture were from the brush-covered wigwam to the small building of lava stone, and from this to the cliff dwelling, and from the cliff dwelling to the many storied barrack which is both cliff and dwelling in one. Their art began with the vessels of gourds which gave the first idea of a basket or wicker tray and from this arose the knowledge of pottery. The first ornamentation of their pottery was derived from the wicker work; afterwards other symbols and markings of a pictorial nature came in.

The paper upon Wampum was based upon the idea that this was used as currency, and the comparison between the wam-

pum of the Indians and the shell money of the Micronesians and the tortoise shell disks which were once used by the Chinese as money.

In the discussion which followed, the position which Mr. Hale occupied was virtually endorsed. The wampum was used as a currency among the Zunis, and was common in California. Dr. Tylor mentioned that the Melanesians used shell money in true banker fashion as a medium of exchange and as a material which could be borrowed and loaned.

The ceremonial use, and the mnemonic character of the wampum belts were also dwelt upon by Mr. H. Hale in the paper. His opinion was that wampum may have been introduced from the east by way of the Pacific coast, as Japanese junks and Micronesian vessels were often driven out of their course and some of them had been wrecked upon the American coast. This point did not seem so clear, but the fact that shells and disks were used as currency by the rude races of the earth was plainly shown.

In the line of Philology several papers were presented. One by Major J. W. Powell on the classification of American languages, illustrated by an ethnographic map and another was on the customs and languages of the Iroquois. Major Powell proposes to adopt a system of nomenclature which would become quite revolutionary. One feature of the plan is to adopt the name given to the Stock language by the author who first wrote about it. Another is to discard all double names, such as Huron-Iroquois, Lenno Lenape-Agonkin, and still another is to add to the family name the syllable *an*, making them Esquimoan, Algonkian, Iroquoisan, Pawnean.

In the discussion it was said that Prof. Max Muller had proposed for sub-familes the term *ic* as Indic, Persic, Tartaric-Ugric, but that these matters should be referred to an international committee before they became common.

Mrs. Erminnie Smith read a paper upon the peculiarly descriptive force of the names given by the Iroquois to animals and other common objects, and illustrated the subject by many curious examples. The word rattlesnake means "he squirms," for rabbit "two little ears together," for goose "it breaks its voice;" tears are "eye-juice," sugar is "tree-juice."

The meeting of the American Association at Philadelphia, September 4–11, was one of the most successful meetings ever held. The attendance was large and was enlivened by the presence of a number of the members of the British Association who had come from Montreal to these sessions, though a number of the most distinguished anthropologists, such as Dr. Dawkins and others had accepted invitations and had taken the long trip to the Rocky Mountains and so were absent. Prof. E. B. Tylor, however, who may be regarded as the chief of all

anthropologists, was present, and added much to the interest of the occasion. The papers upon anthropology were numerous and varied, and the discussions upon them were of an interesting character.

There were some serious drawbacks arising from the acoustic properties of the hall in which the sessions were held, and from the crush of a large association in the midst of a noisy city, during the hottest days of the whole season. It is one peculiarity of this section that it always draws the largest number of spectators and hearers, and is generally assigned a large room. This prevents deliberate discussion and requires more skill than is always possessed by the presiding officer to give deliberation and order to the assembly. The best reports of this section were given by a representative of "Science." These reports were in the main good, though brief, but the tendency is with ordinary newspapers to present the popular sentiment rather than to consult scientific accuracy. Reporters would do better if impressions and personal predilections were eliminated and the purely scientific aspect of the subjects presented were furnished the public in their published reports.

The impression made by a paper on the mind of a reporter may or may not be a proof of its merits, but the question is whether the readers of a scientific journal are to judge for themselves or are to take the opinion of an unknown reporter. The arrangements made for securing the titles of the papers of the association were defective and there was too little care taken in getting the right titles upon the programme. One title was placed upon the programme which was never given to the committee, but it passed through the whole session, and in spite of all efforts of members of the committee was not corrected, and appeared in all reports, though no paper was ever read upon the subject. The arrangements for guests were complete, the hospitality of the city generous, the receptions elegant, and the courtesies bestowed upon foreign visitors by citizens numerous. The opening address in the Anthropological section was given by Prof. E. S. Morse, on "Man in the Tertiaries." Prof. Morse's theory is that man was evolved from the ape, but in order to make the theory complete, we must go back past the quarteiary into the tertiaries. The earliest remains of man do not have the most pronounced ape-like features, and therefore, we must look to another stem, hidden farther back. The conditions of life which characterized early man render the preservation of his remains a matter of extreme improbability. Chief among the agencies in destroying the evidences of man have been the glacial floods, and these have evidently buried beyond recovery the earlier traces.

The fact that man is structurely the highest of the mammals has led to the belief that he must have last been evolved, but the limbs of man are those of a primitive type common in the Eocene

and his superiority consists only in the complexity and size of the brain. His structural affinities show that the diverging branches of man's ancestry began farther back than the present apes.

The next point was as to the crania. The crania prove that the subspecies of man became fixed in the pre-glacial period. The earliest remains are not confined to one region of the earth but are scatered from India to North America, showing that in pre-glacial times there was a distribution of man. It may seem a fruitless speculation, but one is tempted to surmise that man originated in the tropics, and that submerged continents furnished the paths over which he migrated. The evidence of the remoteness of man's existence in time and space is so vast that to borrow an astronomical term no parallax has thus far been established by which we can even faintly approximate the distance of the horizon in which he first appeared.

The first papers read before the section were two by the editor of this Journal, upon the emblematic mounds, their uses and purposes. They were followed by an extended discussion, more especially on the symbolism which was referred to by the author. Mr. Laflesche, an Omaha Indian, said that there were animal symbols among his people.

Rev. Mr. Syle, a missionary from China, stated that similar symbols had been recognized in Japan, and on the northwest coast of America. Dr. E. B. Tylor mentioned that the totem system was a most perplexing and difficult subject, but said that the study of symbolism in America was very important, and that from this, much information would be gained. Some doubt was expressed as to the identification of the animal figures in the effigies, but Miss Fletcher mentioned that the mounds were actual representations. The papers were illustrated by charts and diagrams, and gave the results of recent investigation. They will be published in future numbers of this Journal.

The next paper was upon "Child Life Among the Omahas," by Miss A. C. Fletcher. The child when ten days old receives a sacred name. This name is given with impressive ceremonies, and is so chosen as to be significant of the tribal connection.

The cradle for the child is a flat board on which the child is placed and the head is surrounded with bandages a treatment which accounts for the peculiar flattening of the oxiput. When the child is three years old, the solemn ceremony of cutting its hair takes place. At this time the parents frequently give to the child a new name. Each gens has its own style of hair trimming or cutting. In the discussion which followed the facts were brought out which are new. Articles of taboo are common, each gens having certain objects which must be touched. Dreams play an important part in an Indian's life. Miss Fletcher's paper was one of great interest; the author having so

closely associated with the home life of the Indians as to give many facts and being well enough acquainted with ethnology to know what facts are important.

A paper was read by Dr. C. C. Abbott on the quartz relics, which have been found *in situ* in undisturbed gravel near River Falls, Minn., by Miss F. E. Babbitt. In the same connection Dr. Abbott exhibited some of the relics found in the Trenton gravels. The paper elicited some discussion as the Archaeologists present were divided in opinion as to the human origin of these specimens.

The next paper was by Rev. S. D. Peet. "On the Importance of the Architecture in Prehistoric Nations as a means of discoving their Degree of Civilization and Subdividing the Stages of Progress." This was followed by a paper on local-weather lore in southern Indiana by Mr. A. W. Butler.

Mr. A. E. Douglass then described the shell and earth mounds found along the coast of Florida and on the St. Johns river. He mentioned the size of the mounds, one shell ridge being eight miles long. Two mounds explored were composed wholly of bits of rock, and one large mound had a pavement of stone which extended entirely across it.

On Monday Mrs. Erminine A. Smith read a paper on "Disputed Points Concerning Iroquois Pronouns." The early writers recognized only two genders, but she had recognized three as in English. In the discussion Dr. Tylor remarked that savage and uncivilized people do not recognize the division in male, female and neuter, and some like the Zunis make no distinction between male and female, but divide them into animate and inanimate. Miss Fletcher said that in the Dakotah the pronoun was used for both sexes. Mr. F. W. Putnam then gave a long and minute account of the explorations which he and Dr. Metz had carried on for the Peabody Museum, in the group of mounds at Madisonville. It was found that in stratified mounds the layers were always horizontal. He described ashpits and the large stone cists or enclosures, and the clay funnels which were disclosed underneath the surface of these mounds. The relics taken from the mounds were as follows: Shell beads, disks, rings obtained in thousands, cones cut from alligator teeth, ornaments cut from buffalo horns, mica and native copper, specimens of native silver, gold and meteoric iron, pearls, most of them pierced and injured by heat, 50,000 of them, stone disks carved in animal shapes, terra cotta fugurines exceedingly cereartistic and strangely Egyptian in appearance.

A paper by Miss C. A. Studley described some of the crania from this mound.

In the next paper Dr. P. R. Hoy showed how grooved stone axes could be manufactured, and what danger there was from imitations.

Prof. Putnam mentioned that counterfeits were numerous, a shipment of 2,000 of these frauds to England having come to his knowledge.

Major Powell then read a paper on the Mythology of the Wintuns. This paper will soon be published, and therefore we only give the title.

Mr. W. H. Dall gave a paper on the use of "labrets." The extent of the custom over the continent was noticed, and the great size of some of the labrets was mentioned.

The most interesting exercise of the whole session was on Tuesday morning. Mr. Laflesche explained the sacred mysteries of his tribe, especially those connected with the pipes of friendship. Two pipes were on exhibition, the stem of ash seven feet long, decorated with certain feathers of the owl, woodpecker, eagle and ducks, and with hair from the breast of the rabbit, and streamers of horse hair dyed red. The stem was painted green and creased by narrow, straight grooves. When the two pipes are in place they rest upon a wild cat skin at one end, while the other is supported by a crotched stick, and under them are two gourd rattles which are shaken in accompaniment to the song or chant sung, when the pipes are taken up and waved to and fro, as they are during the ceremony.

After Mr. Laflesche had given this paper, Miss Fletcher continued the account, showing how strong the tie of friendship formed in the presence of the pipes is — stronger even than ties of blood — and that in their presence no anger or ill will could have place, but all must be peace and harmony. She spoke of the miraculous power attributed to the pipes by the Indians. The stem was of ash, because that and the cedar were the two sacred trees, the ash being associated with that which is good, and the cedar with that which is bad.

Following this was a paper by Prof. E. S. Morse, containing some of the results of extended interviews with a Korean.

After this Dr. Tylor spoke upon North American races and civilization. He alluded to the resemblance of our North American tribes to Mongolian people. A resemblance suggesting at once not an indigenous origin for the Indian tribes, but a migration from Asia across Behring Strait. The greatest objection to this view is found in the very great diversity in the languages of the American nations. This leads to an examination of the evidences of the antiquity of man upon this continent for, unless we can prove an antiquity sufficiently remote to allow time for the strange diversity of tongues to have occured our perplexity is great. While there is this diversity of language, there is great similarity in the social condition. The neatriarchial system is universally great.

Major Powell then read a paper on three culture periods, sav-

agery, barbarism and civilization. This paper is a part of a forthcoming book on anthropology, and so we omit the contents of it. Mrs. E. Smith then discussed the formation of Iroquois words. A subject which had been already treated by her at Montreal. Dr. A. G. Bell then discussed the subject, "How Can we in the Most Scientific Manner Establish a Race of Deaf Mutes?" He showed that no more efficient means for the formation of such a race could be set in action, than just those which from the best of motives philanthropy had used and was still using for the benefit of these unfortunate people. The first paper of the afternoon was by Rev. S. D. Peet, upon tribal and clan lines recognized among the emblematic mounds. Following this was a description of a hitherto undescribed sacrificial stone at Juan Teotihuacan, by Mr. A. W. Butler. This is five feet and one-half square at the top, and six feet high, very elegantly carved, the bulk of the stone being occupied by a gigantic human head. The closing papers were by Prof. E. S. Morse. The first on archery in Japan gave accounts of methods of arrow release and the use of the bow, containing many interesting facts. His second, on the use of the plow in Japan, Prof. Morse showed some of the forms of the plow seen in Japan, and the manner in which they were used.

OUR NEXT VOLUME.

The present number completes the sixth volume of the AMERICAN ANTIQUARIAN, and we think a few words to our subscribers appropriate. We have noticed great progress in archæology since this journal was begun, and the prospect is that this progress will continue. We have endeavored to keep pace with that progress of discovery and of research, and find that the magazine is appreciated. Nearly all of our subscribers keep the volume, and bind them, showing that they regard the con- We expect to continue its publication, and hope that all archæologists will consider it as their magazine.

We would say that the most reliable investigators are interested in its success and are free to furnish contributions and correspondence to it. Our only difficulty has been to find space enough to publish what is so generously and intelligently furnished. It has required some patience for writers to wait for the publication of their articles, but we shall push forward as fast as circumstances will permit. The correspondence which has been crowded out will be published early in the next volume. Books and pamphlets which have been sent to us and have not been noticed will be reviewed at an early date. The contributions furnished will be also brought into place as soon as possible.

We will say to our patrons that they can aid very much in the increase of our circulation by their personal recommendation, and if they will make the effort they can soon place the journal where the material furnished may be all published. Let each subscriber send one new name only, and we shall be able to make the journal a monthly. Gentlemen, we ask your co-operation.

NOTES ON CLASSICAL ARCHÆOLOGY.

By Prof. A. C. Merriam.

Schliemann's Excavations at Tiryns.—At the meeting of the Anthropological Congress at Breslau, on the fifth of August, Dr. Schliemann was present and spoke of his excavations at Tiryns. The Breslau *Zeitung* gives a report of his address, the substance of which we reproduce, premising that the Acropolis of Tiryns was situated upon a hill 900 feet long by 200 to 250 broad, rising thirty to fifty feet from the plain, the length of the rock running exactly north and south, with the lower part to the north. "In the southeast corner of the Argive plain," began the speaker, "lay the citadel of Tiryns, the birthplace of Hercules. The flourishing period of its history belongs to a prehistoric time, as my excavations prove. Already in the time of Homer the Acropolis was destroyed and lay desolate, buried in ruins. Homer, however, expresses his wonder at the walls of the citadel, and all antiquity spoke of their construction as an extraordinary marvel. Pausanias compares them to the pyramids of Egypt, and says, 'The walls of Tiryns were built by the Cyclopes, and consist of unhewn stones, each of which is so huge that a yoke of mules could not move the smallest from its place. The interstices are filled in with small stones.' The stones of the circuit wall are on an average seven feet long and three feet thick, while the wall itself is fifty feet thick. According to Strabo, King Prœtus of Tiryns, brought the Cyclopes over from Lycia to build the walls, and they must have constructed several similar works, especially the walls of Mycenæ. As Tiryns lies near the sea, in a low plain, the impression is received that in classical days it must have been washed by the sea, and that the strip of land now separating it from the water is of later growth. But this is an error, as is proved by the Cyclopean remains of a city in the vicinity, and its present position on the shore of the sea. The myth of the birth of Hercules in Tiryns, and of the twelve labors laid upon him by Eurystheus, is explained by his double nature as sun-god and as hero. It was but natural that the fable should place the birth of the mighty hero within these gigantic walls. Those swampy, low-lying plains exhaled pestilential fevers in antiquity as at present, and these could be put to rout only by the unwearied efforts of man and the purifying influence of the sun.

The destruction of Tiryns at a far earlier period than is commonly supposed, is evinced by the immense numbers of knives and arrowheads of obsidian hidden in the ruins, as also by the primitive character of the pottery, and the entire absence of the yellow, red or black glazed Hellenic terracottas. The remains of the buildings unearthed speak no less decisively. Of the three plateaus forming the hill, the upper one and the middle one were searched throughout; the lower one was explored only by means of two ditches. The entrance to the whole citadel is covered by a great tower, which is still pretty well preserved, and rises some 30 feet above the outer circuit wall. The last was built from 25 to 50 feet high, of blocks of great size laid together without binding material. Upon this main wall was constructed an upper one, some 26 feet back from the outer face, furnished with long galleries, some of which have a series of openings on the outside, probably to offer quick shelter when attacked. Remains of pillars appear to show that the lower wall was furnished with a roof. On the east side along the face of the great tower was the chief entrance to the acropolis, by a ramp four metres broad, leading up past the tower in such a way that besiegers would have to approach the gate with their right sides (which were unprotected by their shields) exposed to the weapons of the besieged. At the southwest corner of the tower the way divided. On the right it turned to the lower and middle plateau, on the left to the upper, here through a gate whose hinges were still recognizable in the pillars. This gate resembled, so far as it was preserved, the Lion gate of Mycenæ. The way then widened and led to a structure like a propylaeum, which had a hall before and behind. Passing through both halls, one reached a court, upon which two chambers opened to the left. Near this court, at the extreme southern part of the upper citadel, a small Byzantine church had been erected in later days, naturally out of the material of the ancient structure, which was consequently nearly destroyed here. From the propylaeum a small corridor bore to the right (north) direct to the inner rooms of the palace; but the main entrance was westerly over the court and led to a second smaller propylaeum, thence northerly into the main hall,

which was surrounded by pillars and had at its south front, near the propylaeum, an altar corresponding to that mentioned by Homer in the palace of Odysseus. The floor of the hall was covered with a mosaic concrete composed of mortar and small stones intermixed. All the chamber floors in the palace were covered with a similar concrete. The great hall was about 30 by 40 feet, with pillars supporting the roof, between which was a circle in the floor about ten feet in circumference. The object of this circle is unknown; but perhaps the hearth stood here, and it suggests a similar one found in the large temple at Ilium. The floor of the hall shows otherwise traces of lines cutting each other in squares, and remains of red color. Among the small rooms which meet one to the west of this hall, the most interesting is a bath room with its tub about 13 feet square. Its bottom was of a single piece of limestone, and showed around its edges holes drilled through, probably to be used in fastening on the sides and ends of wood. The surface of the stone exhibited small channels cut to carry off the water into a single outlet.

The citadel contained, to the northeast of the large court, a smaller court, which one is inclined to identify as the women's apartments, with its series of smaller rooms that could no longer be distinguished with certainty. The walls of the building are so constructed that the lower part is composed of limestone with a clay mortar, the upper of clay-ibrck. The walls were covered with a layer of clay, and over that a stucco of lime, similar to the larger structures at Ilium. The ornamentation of the rooms is very rich. Quite remarkable is a frieze in which hundreds of small stones of a blue glaze are fixed. More noticeable still are the paintings on the walls, in which the colors are red, yellow, black, blue and white, with ornamentation like that at Orchomenus. Among the very crude figures represented, a charioteer, a procession of warriors, a procession of women, and a cow idol are worthy of mention (all of which were exhibited in exact drawings, as well as a plan of thc acropolis). The worship of Hera at the neighboring shrine of the Heraeum would account for the numerous cow-idols found here as at Mycenae.

The whole palace was destroyed by fire, the walls by the gates being injured most through the presence of the wooden structures there. The limestone of the walls was reduced to lime, and the clay mortar and the upper part of the wall to hard brick. This circumstance, which offered an obstacle to later rebuilding, protected the remains from further destruction. They lay for 3,000 years unchanged with the exception of the south corner where the Byzantine church was built.

The lower part of the citadel must have been dwelt on at different times, as proved by the monochrome glazed yellow, red or black potsherds. Of the middle plateau it was impossible to determine the ground plan. It is plain that the buildings erected there, probably guest chambers, were less solidly constructed. The accumulation on the rock was twenty feet deep.

Outside the acropolis the excavations were limited to ditches run in various directions, down to the bed rock. The heaviest accumulation was nine feet. The remains of potsherds here made it clear that the city enclosed the citadel. The graves of the ancient kings were not to be found, as at Mycenae, and the explorer was of the opin ion, from certain statements of Strabo, that they were to be looked for under the streets of Nauplia. In conclusion, the value of these excavations for science was touched upon. They had been the means of securing in the first place the complete plan of a prehistoric building of the largest size; secondly wall paintings reaching back into the mythic heroic age, more than a thousand years before Christ; and finally a great collection of potsherds, the most faithful witnesses of the condition of culture of the period."

At the close of his address the speaker said that he wished now to hasten as soon as possible to the excavations which he intended to undertake in Crete.

AT the June meeting of the Berlin Anthropological Society, the President, Prof. Virchow, read a letter from Dr. Schliemann describing his work at Tiryns, of which the following is the substance: The ground plan of the houses found there correspond almost exactly with those of Hissarlik, and the kinship of the two places is still further demonstrated by a series of objects discovered. Among the finds especially worthy of mention are twenty-seven bases of pillars of hard limestone, an archaic Doric capital of porous stone, and primitive wall paintings, whose motive coincides with that of the ceiling of the Thalamos at Orchomenus. The colors used are black, red, blue, yellow and white. The blue is proved by analysis to be a pulverized glassy-flux without cobalt, but with some copper. Many obsidian knives were found, potsherds of the early inhabitants, and carbonized grains which Schliemann took for

corn, but Prof. Wittmack as grape seeds; rude hammers of diorite and speckled marble, little metal, but among this a relatively large proportion of lead, and no iron.

The Allgemeine Zeitung adds some details. "The most important find is the archaic house whose structure corresponds throughout with that of the house described in the Odyssey. Its walls, which rise in many places a metre from the soil, consist of common limestone and clay, which, probably through the effect of fire, has become as hard as brick, while the stone has been dissolved into lime. Upon the outside of the walls there was in some places a covering of stucco still remaining, upon which the wall-paintings were found. These have been carefully removed and conveyed to Athens. The paintings contained ornamentation which bears the closest similarity to that of Mycenæ, and that of Spata and Menidhi in Attica. Especially remarkable is one piece which represents a bull, unfortunately somewhat damaged, bearing a rider. Of the last only a limb is to be completely made out, but he is seen to hold the tail of the animal turned round upon the back.

The Academy of July 26th contains the following note: "The results of Dr. Schliemann's excavations at Tiryns turn out to be very important. The buildings he has discovered consist of a palace and two temples. The arrangement, size and position of these agree in the most remarkable manner with those of the temples and palace of the second prehistoric city at Hissarlik, and thus help to settle the date of the latter. In spite of the wall-paintings, the remains at Tiryns must be older than those at Mycenæ, since, besides the archaic pottery found among them, large numbers of obsidian implements have been disinterred."

A TREASURER'S ACCOUNT AT ELEUSIS.— In the March number of the Bulletin de Correspondance Hellenique, M. Foucart discusses with learning and acumen an inscription discovered last year in the excavations of the Archæological Society at Eleusis, a portion of which had been found and published before. The inscription contains an account rendered by the authorities of the temple in relation to the revenues of the landed property belonging thereto and their expenditure, the amount of barley and wheat paid by each tribe and outlying possession of the Athenians to the temple yearly as first fruits, and the moneys contained in the two treasuries of the temple. The temple-demesne was in the Rharian plain in the vicinity of the town, and was at that time (B. C. 329–8) farmed out to the orator Hyperides, by whom the rent was paid in kind, part to the temple, part to the priests and priestesses. Some of the temple portion was used in the payment of prizes for the gymnastic, equestrian and musical contests which were celebrated at the time of the Mysteries. Very little had hitherto been known about these games. They are mentioned by Pindar, his scholiast, Aristotle and the Parian Marbles, but with little detail. From this inscription it is ascertained that they were celebrated every two years, and the prizes did not consist of heads of barley as some have thought, but generous bushels. The musical contests included dramatic exhibitions, as proved by the existence of a theatre there, and by an inscription which speaks of proclaiming a crown at Eleusis in the theatre at the contest of the tragedians. From the account of the tithe of first fruits paid by the several tribes, M. Foucart enters into a minute calculation of the quantity of grain produced in Attica annually, and arrives at the conclusion that it amounted to about 400,000 medimni, or 600,000 bushels. Boeckh, however, calculated it at 2,800,000 medimni, an estimate which Foucart regards as very high, even after making allowance for the fact that the year 329–8 is known from inscriptions to have been one when the harvest was very meagre. The only kinds of grain mentioned are barley and wheat; the yield of the latter is scarcely one-tenth the former. Salamis produced nothing but barley, while Imbros, on the other hand, yielded more wheat than barley. The price of barley was half that of wheat, three drachmas to six. Comparing the wages of workmen, we see how much more in proportion ours are paid. An architect received two drachmas per day, nominally about forty cents, with wheat at eighty cents a bushel, and these wages had been doubled since the erection of the Erechtheum in 408 B. C. Carpenters, stone cutters and stone polishers received two drachmas likewise, and some of the workmen less.

MISS CATHARINE WOLF, whose generous gifts to archæology and art are well known to New York, has now embarked in an undertaking which bids fair to make her reputation, like Schliemann's, world wide. She has undertaken to pay the expenses of an expedition to the Babylonian plain under the leadership of Dr. W. Hayes Ward, the Assyrian scholar, and in conjunction with the Archæological Institute of America, for the purpose of making excavations on the site of Babylon. The field is a rich one that has never been properly explored, and the promise is of an ample

harvest, if the vexatious restrictions upon archæological investigations recently promulgated by the Turkish government do not cripple the opportunities of the expedition. The best wishes of all interested in archæology are with Dr. Ward and his coadjutors.

THE British Museum has received a rubbing from a new Hittite inscription. In their general characteristics the hieroglyphics resemble those on the monuments from Jerablus, the reputed site of the ancient Carchemish. Those, however, are habitually cut in relief, while these are incised in outline.

THE ART COLLECTION of Signor Castellani, which became so well known in this country by its exhibition at the Philadelphia Centennial Exposition, and for some months in the Metropolitan Museum in New York, was sold at auction last spring, after the death of its collector. Some of the objects were purchased by the British Museum, and among them were several which may be remembered as having been seen here, notably two *cistæ*, or bronze boxes for toilet articles, with incised designs. One represents Atalanta entering the race with Hippomenes, who carries the golden apple with which he is finally to win the race; the other depicts the purely Italian scene in which King Latinus stands in the act of accepting Æneas as the suitor of his daughter Lavinia, while the dead body of Turnus is being dragged away on the left. Since this *cista* is to be assigned to about the third century B. C., it is of especial interest as showing that Virgil did not invent this incident, but found the legend already long current when he wrote.

THE repairs which have been for some time in progress in the Greek gallery of the basement of the Louvre are now complete. The Venus of Milo has been replaced in the old spot and adjusted on a new plinth, so that the error of the original position of the figure has been rectified, and the disposition of an important part of the drapery made intelligible. The fragments found with the statue have been properly displayed and arranged better than before.

MR. WOOD'S EXCAVATIONS AT EPHESUS.— These were carried on by private subscription from March, 1883, to nearly the end of May, and from September to the middle of February, 1884. Only a few hundred pounds were placed at his disposal, but besides finding many fragments of the superstructure of the Temple of Diana, he proved that if further excavations could be made much might be added to the collection with which he has already enriched the British Museum.

THE announcement is made that Prof. Franz Ruehl, of Konigsberg, has discovered the manuscript of a diary belonging to the sixteenth century, in which some accounts of excavations at Troy are to be found.

DISCOVERIES AT EPIDAURUS.—Almost immediately upon the resumption of excavations at Epidaurus, this year, among the ruins of the Temple of Aesculapius there were found two statues of naked youths and a Victory, and soon after a second Victory, and a surprisingly beautiful head of a woman, which in all probability belongs to one of these Victories. Two noble reliefs, supposably offerings, were also disinterred. The two youthful statues in the form of Apollo and Mercury belong probably to the east frieze of the Naos, and appear to represent Lapiths in conflict with Centaurs. In their artistic conception they plainly exhibit many similarities to the Hermes of Praxiteles from Olympia. The Victory is in an excellent state of preservation. It belongs likewise to the east frieze, and is represented as if just descended from heaven and resting on one foot. These discoveries throw new light upon the period of the construction of the temple and its monuments. A new building was also discovered near the Stadium, in Doric style, which must be the temple of Artemis mentioned by Pausanias. This adds a fourth to the three buildings whose sites have already been determined there — the Temple of Aesculapius, the Tholos, of which Polyclitus was the architect, and the Abaton in which the suppliants slept and dreamed. The Victory is said to be the only statue of the 4th century B. C. which has been preserved with its head. In July a third Victory was found without a head, and a fine relief of Aesculapius seated upon a throne.

NOTES FROM THE FAR EAST.

By Prof. John Avery.

The Languages of Melanesia. It has been generally assumed that the languages of the black Papuans or Melanesians, as they are also called, who people the islands of the Pacific from Fiji westward to New Guinea, are quite distinct from those of the Polynesians on the east and the Malayans on the west. The striking physical differences between the Melanesians and the two other peoples named have doubtless prepossessed scholars in favor of this view. Recently, however, a paper was read before the Anthropological Institute of Great Britain, by the Rev. R. H. Codrington, in which an attempt was made to prove that the tongues of these races are fundamentally akin. The writer had the advantage of a personal acquaintance with the people and a familiarity with their languages such as scholars at a distance can hardly hope to attain; hence his observations are entitled to great respect, though they professedly do not cover the whole field — particularly the western part of it. His theory is based on a comparison of words and grammatical usages in more than thirty languages and dialects, the results of which are briefly as follows: First, those languages which, as in Fiji, lie on the border of Polynesian settlements, show no greater likeness to Polynesian than do those farther away, from which one might infer that any similarity discernable is due not to influences coming from the east in comparatively recent times, but to a more radical connection. Second, the prevailing consonantal character of Melanesian speech has been greatly depended on as fundamentally dividing it from the more vocalic Polynesian; but we find languges on the Fiji and Solomon groups that as commonly use open syllables as the flowing Maori. Indeed, there are tongues lying side by side that exhibit the most opposite qualities in this respect, so that this test cannot be regarded as crucial. Finally, the writer observes syntactic constructions, simple and few as they are, that are repeated in Malayan and Polynesian, besides numerous coincidences in vocabulary. It is evident that the question turns on the extent and radical character of these common features. If the author's view is correct, we must suppose either that the Malayans, Melanesians and Polynesians belong to the same race, or that one of these races has imposed its language upon the others. The marked physical differences between the black and the brown peoples seem to debar the former supposition; and, on the other hand, if the black race has best preserved the primitive linguistic stock, as Mr. Codrington seems to think, it must have been the source from which the others have derived their speech. In other words, the less enterprising and the intellectually inferior people has given its language to the more aggressive and civilized race. We are not in a position to weigh critically the facts brought forward by the writer, but the difficulties they involve incline us still to find their explanation, in the western part of the domain, to the forward march of Malayan influence, and, in the eastern, to the reflex movements of Polynesian colonies. That the latter have settled here and there in Melanesia, even sailing far toward the west, there can be no reasonable doubt.

The Initiation into Manhood at Fiji. — In the May number of this journal we gave an account of the ceremony of initiating youths into manhood as practiced by certain rude tribes in Australia. It appears that a like custom, though differing in the mode of its observance, once existed among a Melanesian people, on the island of Viti Leou, the largest of the Fiji group. The custom has since been abolished by the influence of Christianity. The institution had the peculiarity in Fiji that it was confined not only to a single island, but to a particular part of it, and to certain tribes. Both the ceremony and the place of performance were called Nanga, and no male, be he young or old, was entitled to the privileges of manhood until he had been duly initiated. The place of celebration was a plot of ground, usually at some distance from the village, enclosed by a low stone wall, and divided by cross walls into three sections, called respectively the Little, the Great, and the Sacred Nanga. Corresponding to these divisions the adult males of the community were classsed in three grades. At the head were the elders or the members of the Nanga, called Vere; next to these were the Vunilolo, or men who had attended at least two initiations; lastly came the Vilavou, or young men who had been partly initiated, and were still on probation. Below these classes were the women, who were not ordinarily allowed to en-

ter or pass near the Nanga. An initiation generally occurred once in two years, but was more frequent if the number of youths awaiting admission was considerable, or was longer deferred if war or other circumstances made it inconvenient to celebrate it. The time of puberty was the usual age of initiation. As the day approached the usual pursuits of the community were dropped, and enormous quantities of provisions were stored in readiness for protracted feasting. At the appointed time the Vere and Vunilolo, headed by the chief priest, repaired to the Nanga, and made offerings to the ancestral spirits. The young men, with shaven heads, were then brought into the great Nanga, led by an old Vere. Each youth bore a spear and club, and was swathed in many folds of native cloth, of which he proceeded to divest himself, and which was deposited with other articles as a gift on the ground. Then followed general feasting, continued through the night. A like ceremony was repeated four days in succession; and on the fifth larger gifts were brought, and the novices were led into the last and most sacred enclosure. Here they were brought face to face with the chief priest, and various mock-tragic ceremonies were gone through, designed to impress their minds with the importance ot the occasion. On the following morning the women were called in, and for a time a scene of unrestrained license prevailed, after which the people returned to their homes, and society resumed its usual relations. We do not observe in this ceremony the knocking out of teeth or the other ordeals designed to test the physical endurance of the candidate, as was the case in Australia. For this description we are indebted to a paper by Rev. Lorimer Fison, in the *Anthropological Journal* for August.

THE HILL TRIBES OF TRAVANCORE.—The native kingdom of Travancore, which lies along the southwestern border of India from the Periyar river to Cape Cormorin, is separated from Madura and Tinnevelly by an irregular mountainous region, embracing a great variety of soil and climate, and for the mosr part clothed with magnificent forests. These highlands have been the home, from time immemorial, of allied tribes, who exhibit many of the qualities of similar populations in other parts of India. They are estimated to number about 15,000, and are most thickly grouped in the Neyattankara district, spreading out more thinly along the forest glades north and south of this point. The southern tribes are collectively known as Kanikars "hereditary proprietors," while the northern, and more intelligent tribes are called Mala Arayans. The Kanikars are described as short and meagre in form and decidedly negroid in features. The men go entirely naked, excepting a loin-cloth, but the women have a somewhat ampler covering. They live by clans in little villages, constructed partly on the ground and partly in trees for greater security against wild beasts. Their system of government is patriarchal, each village being under the control of a headman, whose authority is submitted to by general consent. They also acknowledge a nominal allegiance to the Rajah of Travancore, to whom they occasionally bring a tribute of their forest fruits. They subsist chiefly by the rude agriculture practiced by the hill tribes generally. It consists of burning a spot of jungle and sowing seed in the ashes. In two or three years they wander off to another location. Though acute in the senses exercised for preserving life in the forest, their intellects are not of a high order. They produce fire by friction, a sharpened peg made from a certain reed being rapidly revolved on another piece of the same material. They do not count above ten, when that number is reached they lay down a pebble and begin again. The knotted fibres of climbing plants sometimes serve as a rude symbolic language. Sickness is sent by demons and it is the duty of the headman to decide upon suitable offerings to propitiate them. This he does with manifestations of demoniacal possession and amid a din of drums and outcries. After death, food is placed in the mouth of the corpse, and it is buried at a distance from the village. The Kanakars have little conception of a soul or a future life. To keep on good terms with numerous spirits residing in their hills and forests is their chief concern. They make no images of these, but sometimes use small stones as fetishes.

The Mala Arayans have more fixed dwellings and stand somewhat higher in the social scale. They are short in stature, like most of the hill tribes, but are said to be as fair in complexion as high-caste Hindus. They speak a rude form of Malayalan, while the southern tribes speak bad Tamil. The customs of these forest men are, in general, so much like those already described that they need not be repeated. Their mode of disposing of the dead, however, deserves mention. There occur on their hills numerous dolmen-like tombs of great age, such as are found in other parts of southern India. These are vaults formed of upright slabs of granite from 8 to 15 feet in length and surmounted by a capstone. These blocks are often of enormous weight, and it is difficult to see how they could be moved without machinery. The

longest diameter of the tombs is north and south, and in the southern face is a circular aperture, which is closed by a round pebble, kept in place by a stone prop. Who built these cyclopean monuments — whether an earlier race that has since disappeared, or the ancestors of the present population — no one can tell. It is interesting, therefore, to note that the Arayans to this day make out of fragments of stone little box-like tombs a few inches square and after the pattern of the larger structures. When a person dies, his spirit is supposed to enter a little brass or silver image, kept in readiness, which with a little food, is then placed in the cell and hastily covered with the capstone. On each recurring anniversary the cell is opened, food is placed within for the imprisoned spirit, and the whole is quickly covered as before. In this singular custom one can hardly avoid the conviction that we see the survival in miniature of a practice which existed among the ancestors of the same people centuries ago. The Arayans worship, besides various demons, the spirits of their ancestors. Effigies, in which these are supposed to reside, are kept in each household. Other jungle tribes are the Ulladars, the Uralis, and the Mannans. They are inferior to the tribes just described, and derive a precarious subsistence from the chase or the roots and fruits of the forest.

Little can be said regarding the early history and race-connections of these hill people. Bishop Caldwell, who knows so thoroughly the races of southern India, supposes that they were once low-caste Hindus, who were driven to the hills, where they secured a quasi independence, and where, through changed climatic conditions and occupations, they have gradually developed an altered physiognomy and strange customs. The reader who desires to know more regarding these tribes and the other population of one of the most prosperous of the Native States of India may profitably read Rev. S. Mateer's recent work on *Native Life in Travancore.*

BOOK REVIEW.

The Algonquin Legends of New England, or Myths and Folk Lore of the Micmac, Passamaquoddy and Penobscott Tribes. By CHARLES G. LELAND. Boston, 1884: Houghton, Mifflin & Co., New York.

The study of native mythology in America is proving to be very interesting whenever survivors of the old Indian tribes are found. There appear a great number of traditions which have been transmitted from prehistoric times. These traditions are many of them local and are generally affixed to local objects. The association of mythology with the scenes of nature is one of the most interesting features of it. We have now New England mythologized as Old England is, the far west also, has been similarly favored, but the great interior has lost its native traditionary myths. Mr. Leland was fortunate in obtaining the manuscripts of a Rev. Mr. Brand and Mrs. W. Wallace Brown, and from other persons, has secured a vast amount of original genuine Indian mythology. The tribes which have preserved these are the Miomacs, the Passamaquoddies, the Penobscots and the St. Francis Indians.

The Wabaniki mythology was one which gave a fairy, an elf, a naiad, a hero to every rock and river and ancient hill in New England, but is just the one of all others which is least known to all New Englanders. When the last Indian shall be in his grave, those who come after us will ask in wonder why we had no curiosity as to the romance of our country and so much as to that of every other land on earth. Mr. Leland finds in Indian tradition the remains of a grand mythology, whose central figure was suggestive of Thor or Odin, with a strong domestic element. This god "Glooskap," is the Norse god intensified, and the connection of the various legends shows them to be parts of one great whole, and constantly analagous to those of the younger Edda.

A Dissertation on the Proper Names of the Panjabs, by CAPT. R. C. TEMPLE. Bombay, 1883. 8vo. pp. 228.

The investigations, of which the preliminary results are set forth in this book, were begun with the view to ascertain what indications of national life and racial history can be learned from a study of proper names. The scope of the inquiry is, however, chiefly limited to the rural population of the Eastern Panjab, where the Hindu element greatly preponderates.

The author first points out the very effective methods employed to identify individuals, by which the repetition of the same name is seldom required. This is accomplished, first, by suffixes; thus from the root *Nath* are formed Natha, Nathi, Natho, Nathwi, Nathia, and eight more. By lengthening the vowel of the primitive the number is doubled. Then, the number may be almost indefinitely increased by complementary additions, such as Singh, Mall, Ram, e. g., Natha Singh, Natha Mall. Caste names frequently serve for this purpose.

The common grounds for selecting particular names are: the religious hopes of parents, natural affection, physical or mental peculiarities, special superstitions, and special customs. Of Mr. Temple's list of more than two thousand names, about twenty-eight per cent. show a religious motive; twenty-one per cent. are pet names. Opprobrious names are given with the idea that children are thereby shielded from evil influences. Often the name recalls some accident of birth, as to time or place; thus, Sawara, 'Born on Monday,' Pahari 'Born in the Hills.' Those indicating a quality of mind or body, are very numerous, as Kubbe Singh 'Hunchback,' Magra Mall 'Sulky.' Among the Mohammedan population, about half the proper names have a religious origin, being derived from the Arabic or other foreign source; the Apostles of Islam, the Worthies named in the Quran, and "Most Comely Names of God," constantly recurring. The other half of their nomenclature is formed on the same principles as that of the Hindus, often with an amusing forgetfulness of religious consistency. We cannot enter into details, nor allude to many other interesting discussions in this volume, including a comparison of the nomenclature of modern with that of ancient and mediæval India. The field is new, so far as relates to India and promises to throw much light on the course of civilization, not only there, bu in other lands.

"*Troja.*" Results of the latest researches and discoveries on the site of Homer's Troy, and in the heroic tumuli and other sites made in the year 1882, by Dr. HENRY SCHLIEMANN, preface by Prof. A. H. Sayce. New York: Harper & Brothers. Franklin Square. 1884.

This admirably written book has already been reviewed by our associate, Prof. A. C. Merriam. It only remains for us to speak of the value of the book to the archaeologists. The work of excavation at Troy has ceased. This volume, with the preceding, will contain all that Dr. Schliemann has to say upon the archæology of this buried city. Dr. Sayce says prehistoric archæology in general owes as much to Dr. Schliemann's discoveries, as the study of Greek history and Greek art. We are carried back to a time when the Assyrians and the Hittites did not as yet exist, when the Aryan forefathers of the Greeks had not as yet, perhaps, reached their new home in the south, but when the rude tribes of the neolithic age had already begun to traffic and barter, and traveling caravans conveyed the precious stone of the Kuen-lun from one extremity of Asia to the other. Prehistoric archæology in general owes as much to Dr. Schliemann as the study of Greek history and Greek art. It appears now that Homer gave only the legend of the Illium's tragic fate, as it was handed down to him by preceding bards, but much more has been disclosed concerning Troy, and especially its preceding history than Homer has disclosed. The second city of Hissarlik belongs to the prehistoric age. Above the ruins of it lie the remains of no less than four prehistoric settlements. As to the date of these settlements, one fact is worthy of notice.

Dr. Sayce says that we find no traces among them of Phœnician trade, and so concludes that Illium must have been overthrown before the busy traders of the Kanaan had visited the shores. Not only has the Phœnicion left no trace of himself, but the influence of Assyrian art, which began to spread through eastern Asia about 1200 B. C., is equally absent. The Hittites were wandering from their capital at Carchemish, on the Euphrates, to the shores of the Ægian Sea. To the Hittites belong some of the antiquities which are found in this region. The history of Troy, then may be said to have filled up this period which elapsed between the migration of the Hittites and the rise of civilization in the old Greek cities. The work of the archæologist is not completed, however, for the relics which have been exhumed even from Troy need to be compared with the relics which the various races have left on the soil of Asia Minor, but which still lie buried beneath the accumulations of many centuries. It is probable that as explorations are continued in this region the relics exhumed by Dr. Schliemann will be identified with the races more fully than they can be now. For the present we accept Dr. Schliemann's conclusions, both as to the location of Troy, and as to the different periods of the history, but the races which overran that region and left their relics on this site are still comparatively unknown.

The material secured by the last exploration, and described in this volume, is, however, additional to that which has been previously gathered, and there is no doubt that if we should take all of the books written by Dr. Schliemann, we should find a history of the archæological progress of this entire region, so that the volume has very great value even when viewed in this light. The association of Homer with the scene will prove to be the most charming part of the work, as the poetry has thrown a halo of beauty over the scene which contrasts strangely with the rude disclosures of the spade.

Folk Lore of Shakespere, by the Rev. THISTLETON DYER. $2.50. New York: Harper & Bro.

Mr. Dyer's system is to take for each chapter a general subject, such as Fairies, Witches, Ghosts, Demons, Birds, Animals, Plants, Insects, Medicine, Marriage, Birth and Baptisms, Sports and Pastimes, Punishment and Proverbs.

The title of the book is Folk Lore, but the object really is to show the superstitions and notions which prevailed in Shakespere's time concerning the various objects enumerated above. There is no attempt to trace these superstitions and legends to their source, but a mere enumeration of them and a reference to the passages in which they are embodied with the quotation of some other literary works which were extant at the time. The author does not seem to be acquainted with Folk Lore in its broad range and in its antiquarian aspects but presents it more as it is connected with the literature of the period. He catches up the threads which were contained in the English thought, and which Shakespere has woven into his marvelous word pictures, but does not trace the thread further back than the English language, and scarcely further back than Shakespere's own time. As an additional volume in the library of Shakesperiana the book has considerable value as it brings out a special feature in the writings of the late dramatist. The students of Folk Lore will find the volume full of hints, but they are only hints, and yet they reveal how many themes there are for him to study in connection with his specialty. As a literary production the work is fragmentary, and yet it has many gems of thought which may be picked up and made useful in other directions than in the line of mythology or tradition.

The Legends of the Panjab. By CAPT. R. C. TEMPLE. Bombay, 1883–4. pp. xxvii and 546.

The first volume of this work, which was begun in August, 1883, and has appeared in monthly parts, is concluded with the July number, which contains a Table of Contents and an extended Preface. The stories in the series are seventeen in number, and were collected with much care and no little difficulty from the wandering bards and unlettered villagers of Northwestern India. They are metrical in form, and are printed in the exact language in which they were told. The transliteration in Roman letter is accompanied with an English translation and notes. The introduction of the text is a valuable feature, since it illustrates many local peculiarities of vocabulary and grammatical structure. The tales, aside from their Oriental setting, have much in common with such literature everywhere. There is the hero who is defrauded of his rights, and who, after long wanderings and a variety of strange adventures, marries a princess, and lives ever after in luxury and honor; there is the dreadful ogre who dines upon women and children, and is the terror of the country round; there is the companion — man, woman, or beast — skilled in magic arts, who extricates the hero from hopeless difficulty — all of which are served up with the usual garnish of impossible feats, unheard-of perfections, and miraculous deliverances. Those who like to know how the fancy of men has run riot, though following the same general lines and with the same under current of moral reflection, in every age and country will find this book both entertaining and instructive.

The same indefatigable author proposes to publish from original Persian manuscripts some volumes of memoirs and diaries of the times of Maharaja Ranjit Singh, the "Lion of the Panjab," and his successors, written by a Vakil of the Sikh Court. He also announces a revised edition of Dr. Fallon's Hindustani Proverbs. Under the title Wide-Awake Stories, "told by little children between sunset and sunrise in the Panjab and Kashmir," Mrs. Steel and Capt. Temple are reprinting, with Notes and Introduction, a collection of Folk tales, which have appeared at intervals in the Indian Antiquary.

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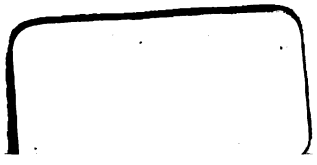
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